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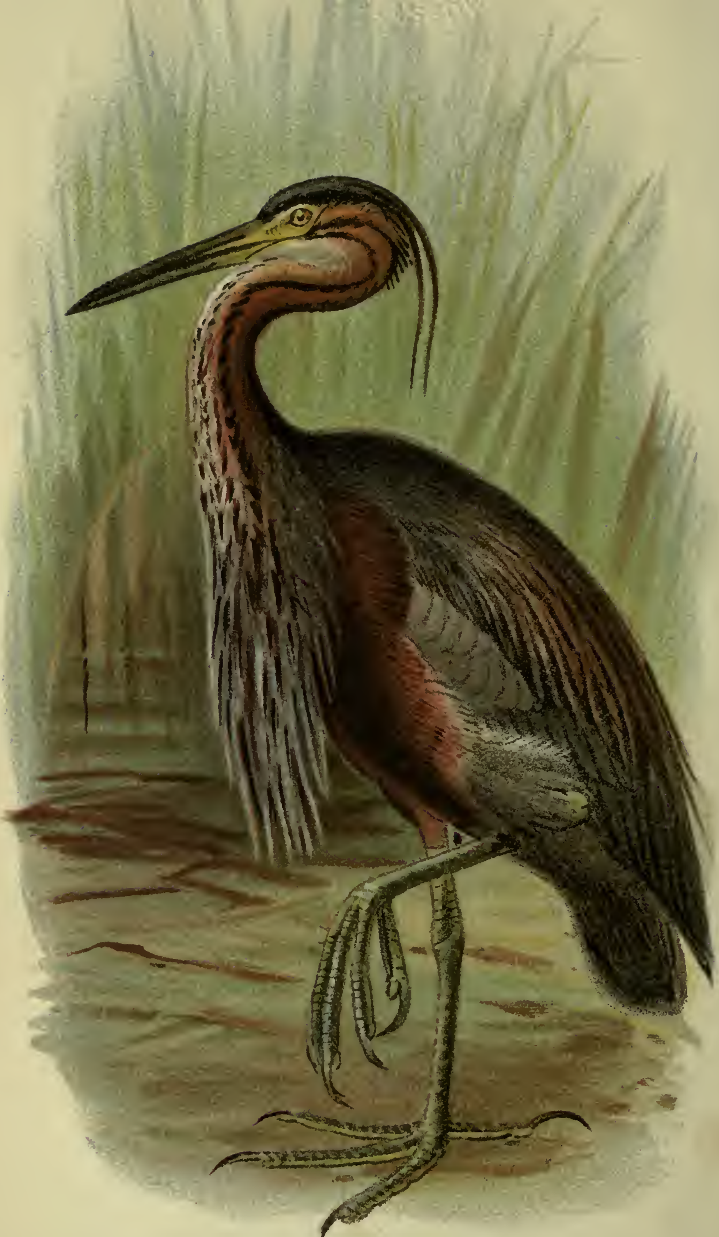

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EDITED BY R. BOWDLER SHARPE, LL.D., F.L.S., ETC.

A HAND-BOOK
TO THE
BIRDS
OF
GREAT BRITAIN.

BY

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ZOOLOGICAL DEPARTMENT, BRITISH MUSEUM.

VOL. III.

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PREFACE.

I HAVE nothing to add to the prefatory remarks in the previous volumes, and am only too pleased to find that I have no heterodox views to defend, nor any criticisms to reply to.

It only remains, therefore, to thank my kind friends who have helped me in the preparation of the present volume. It has been a somewhat tedious task, as the general habits of Wading Birds are so much alike, that it is difficult to find anything to say about them that has not been excellently done by the late Mr. Henry Seebohm or by Mr. Howard Saunders. Many of the descriptions of the Waders are taken from my recent work on the group in the "Catalogue of Birds," and I hope that these will be found instructive to the numbers of ornithologists who are interested in Shore-Birds and Waders generally. I have also endeavoured to quote works on natural history not familiarly known in this country; and the notes on the habits of some of the North American species, taken from the writings of Mr. E. W. Nelson and Mr. D. G. Elliot, will be found to be of some interest, and the latter's recent book on North American Shore-birds has frequently been laid under contribution in the following pages.

R. BOWDLER SHARPE.

Feb. 26, 1896.

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BRITISH BIRDS.

ORDER ANSERIFORMES (Vol. ii. p. 223: *continued*).

FAMILY ANATIDÆ (Vol. ii. p. 224: *continued*).

THE DIVING DUCKS. SUB-FAMILY FULIGULINÆ.

THESE Ducks are distinguished by Count Salvadori by the character of the hind-toe being furnished with a very broad lobe. Four Sub-families have this peculiarity: viz., the Soft-tailed Diving Ducks (*Fuligulinæ*), the Stiff-tailed Diving Ducks (*Erismaturinæ*), the Torrent-Ducks (*Merganettinæ*), and the Mergansers (*Merginæ*). Of these the first and the last have British representatives. All the Diving Ducks appear to have a post-nuptial plumage, when the males become more or less like the females, during the time that they moult their quills. Unfortunately for the purposes of the present work, they are so seldom shot during this period, that I have, in the National Collection, no specimens from which to describe these changes.

THE RED-CRESTED POCHARDS. GENUS NETTA.

Netta, Kaup, Natürl. Syst. p. 102 (1829).

The single species which comprises this genus is remarkable for its very full crest, and for the prominent indentations of the upper mandible. It belongs to the section of the Diving Ducks which have a "mirror" on the wing, the primaries not being uniform dark brown or blackish, but partly whitish, with the tip brown (cf. Salvadori, *tom. cit.* p. 326).

I. THE RED-CRESTED POCHARD. NETTA RUFINA.

Anas rufina, Pallas, Reise, ii. App. p. 713 (1773).
Aythya rufina, Macg. Br. B. v. p. 109 (1852).
Fuligula rufina, Dresser, B. Eur. vi. p. 559, pl. 435 (1873); B. O. U. List Br. B. p. 128 (1883); Saunders, ed. Yarr. Br. B. iv. p. 403 (1884); Seebohm, Br. B. iii. p. 567 (1885); Saunders, Man. p. 431 (1889); Lilford, Col. Fig. Br. B. part x. (1889).
Netta rufina, Salvad. Cat. B. Brit. Mus. xxvii. p. 328 (1895).

Adult Male.—Back light drab-brown, including the mantle, upper back, and scapulars; lower back, rump, and upper tail-coverts black; a white patch on each side of the mantle; wing-coverts dull ashy, those round the end of the wing white; bastard-wing and primary-coverts also ashy; primaries ashy-brown externally, as well as at the tips of the inner webs, with a sub-terminal black bar on the latter, the inner webs otherwise white, forming a large "mirror," extending on to the outer webs of the inner primaries, which are white excepting for their blackish tips; secondaries also white, with a sub-terminal bar of ashy; the inner ones pearly-grey, the innermost brown, like the scapulars; tail ashy-grey; crown of head much crested, cinnamon; lores, sides of face, and throat vinous-chestnut; a band down the hind-neck, sides of neck and upper mantle, as well as the under surface of the body black, rather browner on the abdomen; sides of body white, the feathers adjoining the black colour vermiculated with dusky; the flank-feathers light brown at the ends; axillaries and under wing-coverts white; "bill brilliant crimson, sometimes a little inclining to vermilion; nail brown or white, tinged with brownish-horn or pink horny, brown or yellow at tip; feet dingy salmon-colour or reddish-orange, dusky on the joints and blackish on the webs; iris varying from brown to red, in very old birds" (*A. O. Hume*). Total length, 21 inches; culmen, 2·15; wing, 10·3; tail, 2·7; tarsus, 1·6.

Adult Female.—Different from the male. Light brown above, paler on the scapulars, which have whity-brown ends; lower back and rump dusky-brown, the upper tail-coverts paler brown; wing-coverts light brown; quills as in the male, but the white on the inner web of the primaries not quite so extended and more ashy; crown of head slightly crested and rufous-brown, extending down the hind-neck, where it becomes more ashy; lores, sides of face, and throat pale ashy-grey; remainder of under surface of body white, the sides of the body and flanks pale earthy-brown; under wing-coverts and axillaries white, the lower primary-coverts and quill-lining pale ashy; "bill black, reddish or orange towards the tip, and more or less so along the lower and on the edges of the upper mandible" (*A. O. Hume*). Total length, 19 inches; culmen, 1·8; wing, 10·0; tail, 2·7; tarsus, 1·7.

Nestling.—Uniform brown above, with an olive tinge, and with a slightly indicated spot of yellow on each side of the lower back; lores, eyebrow, sides of face, and under surface of body pale yellow; through the eye a streak of dusky-olive; abdomen whiter; sides of body brown, with an olive tinge.

Young Birds.—Resemble the old female, and have the bill and feet similarly coloured. According to Mr. Hume, these vary in young males from olivaceous-orange to pale olive-yellow, reddish-brown, or dusky with a reddish tinge.

Hybrids.—The present species has been known to cross with the Rosy-billed Duck (*Metoponiana peposaca*) and with the Mallard.

Characters.—The lobed hind-toe, the white wing-speculum, and the chestnut crest in the male distinguish the species. The female has the speculum more grey, but has no sign of vermiculations on the back; the axillaries are white.

Range in Great Britain.—An accidental visitor, chiefly in winter. It has occurred mostly on the eastern shores of England, but the National Collection contains one example from Pembrokeshire, and the species has been met with once in Devonshire and once in Cornwall. One Scotch record is known: viz., from Argyllshire, and one from Co. Kerry, in Ireland.

Range outside the British Islands.—This Duck seldom occurs away from Southern and Central Europe, and is only a rare visitor to Holland, Belgium, or France, and has occurred but once in Denmark. Its eastern range appears to extend to Turkestan, though it is plentiful in Southern Russia, and in winter it visits the Mediterranean countries, the Black and

Caspian Seas, and the Indian Peninsula, being very abundant in the last-named locality.

Habits.—The Red-crested Pochard is a fresh-water Duck, and frequents open sheets of water and broads, where there are fringes of reeds or overhanging trees, and being a capital diver, it loves places where the water is deep. Its favourite haunts, says Mr. A. O. Hume, who has given an excellent account of this species in his "Game Birds of India," are deep broads, "where the feathery water-weed beds do not reach within several feet of the surface, not the comparatively shallow ones, where the same weeds lie in thick masses coiled along the surface." Mr. Hume observes that habitually these Ducks keep in moderately-sized flocks of from ten to fifteen, but occasionally on very large pieces of water they are seen in thousands. Of their food he writes:—"Although mainly vegetarians, they indulge more in animal food than the Pochard. I have found small frogs, fish-spawn, shells (both land and water), insects, grubs, worms, and, on three or four occasions, tiny fish, mixed with the vegetable matter, sand, and pebbles that their stomachs contained. . . . I examined one male which had entirely gorged itself on fishes about an inch in length.

"Though constantly seen feeding by day, when in suitable situations, they also feed a good deal during the night, and those individuals, whose day-quarters happen for the time to be on waters that yield little food, leave these at dusk for more prolific haunts. They are strong but heavy fliers, and are slow in getting under way. . . . I have sometimes found them out of the water, on the land a yard or two from the water's edge, grazing and picking up small shells and insects, and they then walk better than the other Pochards. . . . Their call-note, not very often heard by day unless they are alarmed, is quite of the Pochard character, not the quack of a duck, but a deep grating 'kurr.' Occasionally the males only, I think, emit a sharp sibilant note—a sort of whistle, quite different from that of the Wigeon, and yet somewhat reminding one of that. . . . They have a very characteristic wing-rustle, which, though resembling that of the Pochard, is louder and harsher; their wings are short, and rapidly agitated, make a very distinct, palpitating, rushing sound, by which even a single bird, passing anywhere near one in the stillness of the night, can generally be recognised."

Nest.—Placed close to the water, and made of decayed stems of rushes and dead leaves.

Eggs.—Eggs seven to nine in number, of a bright green colour when fresh, but fading, after being blown, to greenish-white. Axis, 2·3–2·4 inches; diam., 1·65–1·75.

THE POCHARDS. GENUS NYROCA.

Nyroca, Fleming, Phil. Zool. ii. p. 260 (1822).

Type, *N. nyroca* (Güld.).

The genus *Nyroca*, according to Count Salvadori, differs from *Netta* in having the indentations not prominent on the upper mandible. The bill does not widen out towards the tip, and is not so broad or so short as in the next genus, *Fuligula*.

I. THE POCHARD. NYROCA FERINA.

Anas ferina, Linn. Syst. Nat. i. p. 230 (1766).
Aythya ferina, Macg. Br. B. v. p. 103 (1852).
Fuligula ferina, Dresser, B. Eur. vi. p. 551, pl. 434 (1878); B. O. U. List Br. B. p. 130 (1883); Seebohm, Br. B. iii. p. 575 (1885); Saunders, ed. Yarr. Br. B. iv. p. 413 (1885); id. Man. Br. B. p. 429 (1889); Lilford, Col. Fig. Br. B. part xiii. (1890).
Nyroca ferina, Salvad. Cat. B. Brit. Mus. xxvii. p. 335 (1895).

Adult Male.—General colour above light grey, everywhere finely vermiculated with wavy cross-lines of dull ashy, less distinct on the lower back, and absent on the rump and upper tail-coverts, which are black; tail grey, minutely freckled with dusky; wing-coverts like the back, but rather more finely freckled, these being less distinct on the greater series, which are uniform grey except at the tips; bastard-wing and primary-coverts dusky; primaries dusky-grey externally, blackish near the tip of the inner webs, which are lavender-grey for the most part, forming a "mirror"; secondaries light grey, edged with white at the ends, and slightly freckled with dusky, the inner ones with black margins, the innermost like the back and similarly freckled; head, neck, and throat deep chestnut; the fore-neck, as well as the sides of the neck and hind-neck, black, forming a broad collar; the chest black, varied with grey vermiculations; breast and remainder of under surface ashy-white, powdered with grey vermiculations; vent and under tail-coverts black; the sides of the body and flanks with somewhat plainer vermiculations; under wing-coverts and axillaries white; lower greater coverts greyish like the quill-lining; bill black at the base and at the tip, with an intermediate band of leaden-blue, varying in width; feet bluish or slaty-grey, or dull leaden-grey, the webs black; iris yellow, becoming lac-red, according to Mr. Hume, in an old male. Total length, 18 inches; culmen, 2·0; wing, 8·3; tail, 2·1; tarsus, 1·4.

Adult Female.—Different from the male. Upper surface rather more coarsely vermiculated, the lower back, rump, and upper tail-coverts dark brown; crown of head reddish-brown like the neck and mantle, but the head much darker; lores, feathers round the eye, sides of face, and throat whitish, with a patch of brown on the face; lower throat and fore-neck and chest brown, washed with ochreous; the chest-feathers brown with whitish margins; remainder of under surface of body whitish, mottled with light brown bases to the feathers, especially distinct on the under tail-coverts; the flanks brown with pale tips; axillaries and under wing-coverts white, with the edge of the wing ashy, like the lower primary-coverts and quill-lining; bill duller than in the male; feet dark leaden-grey; iris sometimes brown. Total length, 18 inches; culmen, 2·0; wing, 8·1; tail, 2·2; tarsus, 1·35.

Young Birds.—According to Count Salvadori, the young males at first resemble the females, but are rather more rufous on the head and neck. In the second year they differ from fully adult birds in having the chestnut of the head and neck paler, and the black of the breast and upper back replaced by dark brown.

Hybrids.—These are numerous, and in some instances they have been recorded as the American Pochard, or have been considered to be distinct species. The Pochard has been known to cross with the White-eyed Pochard, the Summer Duck, the Tufted Duck, the Mallard, and the Golden-eye.

Characters.—Distinguished by its grey back with fine vermiculations, and its chestnut head; the bill is black at the base and tip, the intermediate part being leaden-blue; wing-speculum, *grey*.

Range in Great Britain.—The Pochard breeds in certain inland waters in England, and, where it is protected, its numbers as a nesting-species seem to be on the increase. In Scotland it also nests, but, as regards Ireland, Mr. R. J. Ussher writes:—"The Pochard has been reported as breeding in Galway, Roscommon, Westmeath, Meath, and Tipperary, and some probability attaches to several of these instances; but we still await complete proof of the Pochard breeding in Ireland." In winter the species is found in Great Britain from October to April.

Range outside the British Islands.—The Pochard ranges from Central and Southern Europe to Lake Baikal in Eastern Siberia, breeding in Russia as high as Lake Ladoga and as far south as the Caspian sea, as well as in Poland, Germany, and Denmark, but not to the northward. It occurs in the Mediterranean in winter, at which season it also visits India and China. In North America its place is taken by the American Pochard, which differs in having a purple gloss on the chestnut of the head, and the bill pale blue, with only the end black.

Habits.—Although also frequenting the coasts, the Pochard is principally a fresh-water Duck, and in some of its winter quarters, as in India, occurs in flocks of thousands. Mr. A. O. Hume, whose excellent notes on wild-fowl are not so well-known in this country as they ought to be, has given a very interesting account of his experiences with the Pochard in India, from which I make the following brief extracts. He says that in some places, such as the Sambhar Lake, many acres of water may be seen completely paved with Pochards. "They are eminently swimming and diving Ducks, but walk badly. Their flight is slow and heavy until they get well on the wing, after which it is fairly rapid; but they rise with some difficulty in perfectly calm weather. They swim very rapidly and gracefully; as a rule, rather deep in the water, but at times, especially when a lot are at play together, for a minute or two quite high, as if barely resting on the water. They are very playful, and skirmish about together, chasing each other, scuttling along the surface one moment, out of sight the next, and they are grand divers.

"I think that they feed chiefly by night, for which purpose all birds, spending the day in rivers and bare-shored lakes, leave these at night for more suitable feeding-grounds. But they feed also during the day, when in any of their favourite haunts, and you may see them for an hour together diving for the roots and submerged stems and foliage of all kinds of aquatic plants. With us, in Upper India, their food is, according to my experience, almost entirely vegetable. I have found a few insects, grubs, worms, tiny frogs, and a good many shells in their stomachs, but seeds, flower-buds, shoots, leaves, stems, and roots of water-plants, together with fine pebbles and sand, of which there is always a considerable quantity, have always constituted the bulk of the contents; and it is, perhaps, in consequence of this that, as a rule, when killed inland in India, they are excellent eating. Not so always with those killed on the coast. A pair I shot in Karachi harbour turned out rank and far from good eating; and a third, shot a few days later, proved to have fed chiefly on marine plants, small crustacea and mollusca. Occasionally, when in small parties, they are to be seen paddling about in shallow, weedy corners of jhíls, along with Gadwall, Teal, and Shovelers; but normally they keep in large flocks, and affect pretty deep water when feeding in the day-time."

Nest.—Made of dead grass and sedge, and lined with down.

Eggs.—From seven to ten, the latter being the usual number, though as many as thirteen have been found. The colour is greenish or greenish stone-colour, and they resemble those of the Scaup and Tufted Duck. Axis, 2·45–2·55 inches; diam., 1·65–1·75.

Down.—Of medium size, dark brown, with greyish-brown filamental tips, and a somewhat large star of dull white.

II. THE WHITE-EYED POCHARD. NYROCA NYROCA.

Anas nyroca, Güld. N. Comm. Petrop. xiv. pt. i. p. 403 (1769).
Fuligula nyroca, Macg. Br. B. v. p. 113 (1852); Seeb. Br. B. iii. p. 571 (1885); Saunders, ed. Yarr. Br. B. iv. p. 418 (1885); id. Man. Br. B. p. 433 (1859); Lilford, Col. Fig. Br. B. part xiv. (1890).
Nyroca ferruginea (Gm.), Dresser, B. Eur. vi. p. 581, pl. 438 (1872); B. O. U. List Br. B. p. 130 (1883).
Nyroca africana, Salvad. Cat. B. Brit. Mus. xxvii. p. 345 (1895.)

Adult Male.—General colour above dusky-brown with an oily-green gloss, with scarcely perceptible vermiculations of lighter brown; the lower back, rump, and upper tail-coverts black; wing-coverts brown, faintly vermiculated with lighter brown; greater series blacker, with a slight green gloss; bastard-wing and primary-coverts blackish; primaries externally blackish, as well as at the ends of the inner webs; the rest of the inner web pure white, which extends on to the outer web of the inner primaries; the secondaries white, with a broad black band at the ends, the innermost secondaries black with an oily-green gloss; tail bronzy-black; crown of head slightly crested and bright chestnut, as also the sides of face, sides of neck, sides of mantle, throat, and upper breast; on the chin a white spot; round the lower throat a blackish collar, which joins on the hind-neck and extends to the middle of the mantle, which is dusky-brown washed with rufous; lower breast and abdomen white; sides of the body chestnut, inclining to brown near to the sides of the vent; under tail-coverts white, with a patch of black near the outer base; axillaries and under wing-coverts white; quill-lining also whitish; "bill black, bluish-black, and dark leaden, often browner below; legs and toes slate-colour, leaden, or dusky-grey; the tarsi often with a greenish tinge; the claws and webs dusky-black; iris white or greyish-white" (*A. O. Hume*). Total length, 16·5 inches; culmen, 1·6; wing, 7·4; tail, 2·3; tarsus, 1·25.

Adult Female.—Lighter brown than the male above, the feathers with sandy-buff margins, producing a mottled appearance; the wings as in the male; the crown of the head dark chestnut-brown, the sides of the face and throat a little clearer chestnut with a white chin-spot; the fore-neck and chest, as well as the sides of the body, rufous mottled with dusky bases to the feathers; breast and abdomen white, mottled with dusky on the lower part of the latter. Total length, 14·0 inches; culmen, 1·5; wing, 6·7; tail, 1·9; tarsus, 1·1.

Young Birds.—Count Salvadori states that in immature birds the head and neck is brown, with scarcely any chestnut tinge on the side of the head, the breast and under-parts are brown, the abdomen paler and almost whitish, the under tail-coverts being dull whitish. The iris is said by Dr. Scully to be dark brown or brownish-grey.

Hybrids.—Crosses between this species and the Scaup, the Tufted Scaup, and the Summer Duck, have been recorded.

Characters.—This species is distinguished by its white iris, white speculum, and chestnut head. The male has also a white chin-spot.

Range in Great Britain.—An irregular visitor, generally occurring in the winter and spring. Over thirty examples have been recorded, principally from the eastern counties, but it has also been met with in Cumberland, Northumberland, Dorset, Devon, Radnorshire, and has thrice been obtained near Edinburgh, and has occurred four times on the east and north-east coasts of Ireland.

Range outside the British Islands.—The White-eyed Pochard, or "Ferruginous Duck," as it is often called, is an inhabitant of Southern and Central Europe, and breeds from Holland through Germany to the latitude of Moscow. It also breeds in Central Asia and in Cashmere, visiting the Indian Peninsula and Burma in winter, at which season it also extends through Egypt to Abyssinia, and is found as far west as the Canaries.

Habits.—These are said by Lord Lilford to be like those of the Common Pochard, but its flight is more swift than that of the latter species. He observes:—"It is remarkably tame and fearless of man in comparison with others of the *Anatidæ*, and loves the thick coverts of dense aquatic vegetation. The call-note is a harsh rattling monosyllable, frequently repeated. The flesh of this bird is, in my opinion, excellent."

Mr. Hume says that these Ducks rise from the water with some little difficulty, and strike it repeatedly with their feet as they start; and Captain Shelley states that a large flock makes such a noise with their feet patting the water, that it can be heard at a distance of two miles. Mr. Hume gives the following interesting note on the species:—"In the water they are at home; they swim with great rapidity, and dive marvellously. Indeed, what becomes of them is often a puzzle; the instant that, wounded, they touch the water, they disappear, and not unfrequently that is the last you see of them; at most they only rise once or twice, and then disappear for good. It is a waste of time to pursue them; if they do rise, give them instantly a second barrel. If not, you must trust to the dogs picking them up in the rushes near the margin later in the day when all is quiet. But even the best dogs will be baffled, and I have seen a well-trained retriever, after skirmishing in weeds and water for several minutes in pursuit of a wounded White-eye, come out with his tail between his legs and a general crestfallen appearance, clearly under the impression that, in consequence of some delusion, he had been beguiled into hunting a Dabchick—a bird that from his earliest puppy-hood he had been taught to consider altogether beneath his notice.

"They are with us quite omnivorous; no doubt their food chiefly consists of vegetable matter—leaves, stems, roots and seeds of grass, rush, sedge, and all kinds of aquatic herbage; but besides this I have noted at different times, amongst the contents of their stomachs, delicate fresh-water shells and shrimps, insects, including several species of *Neuroptera* and *Lepidoptera* and their larvæ, worms, grubs, and small fishes. I have often, when lying up hid in the reeds, waiting for more valuable fowl to come over, watched little parties of them feeding in some tiny, weedy, reed-hedged opening. For part of the time they swim about, nibbling at the herbage or picking shells or insects off the lotus leaves; but they are continually disappearing below the surface, often reappearing with a whole bunch of feathery, slimy weed, which all present join in gobbling up. Sometimes they remain a very long time out of sight, I should guess nearly two minutes (it seems an age); but generally they do not, when thus feeding, keep under more than, say from forty to fifty seconds. I fancy that they feed preferentially by day; first, because when in their favourite haunts, I have invariably found them, when I have had opportunities of watching them unperceived, busy feeding at all hours, and never asleep as night-feeding Ducks so constantly are between 11 a.m. and 3 p.m.; and, secondly, because I have so rarely killed them when flight-shooting. When settled on some comfortable, rush-embosomed, weed-interwoven broad, I am pretty certain that they do not change their quarters at nightfall, as when encamped near any of their chosen day haunts I have heard their harsh, familiar call at intervals throughout the midnight hours; but, of course, in the less common case, when they affect bare-shored lakes or rivers by day (and some few do do this), they must needs go elsewhere to feed during the night, and in such situations I have once or twice seen them at mid-day snoozing at the water's edge.

"Their 'quack,' or note, is peculiar, though something like that of the Pochard, a harsh *kirr*, *kirr*, *kirr*, with which one soon becomes acquainted, as they invariably utter it *staccato* as they bustle up from the rushes, often within a few yards of the boat."

Nest.—Composed of dry flags and rushes, and lined with thick brownish down and a few white feathers (*Lilford*).

Eggs.—From nine to fourteen in number, but the usual number is ten. Colour creamy-brown. Axis, 2·0–2·2 inches; diam., 1·45–1·55.

THE SCAUP DUCKS. GENUS FULIGULA.

Fuligula, Steph. Gen. Zool. xii. pt. 2, p. 187 (1824).

Type, *F. fuligula* (L.).

The genus *Fuligula* is very similar to *Nyroca*, and only differs in the shape of the bill, which, as Count Salvadori points out, is rather broader and shorter, and widens out near the end, so that it is wider at the tip than at the base; it is also more rounded at the end. The males in the genus *Fuligula* have the head black, not chestnut.

I. THE TUFTED SCAUP DUCK. FULIGULA FULIGULA.

Anas fuligula, Linn. Syst. Nat. i. p. 207 (1766).

Fuligula cristata, Macg. Br. B. v. p. 121 (1852); Dresser, B. Eur. vi. p. 573, pl. 437 (1879); B. O. U. List Br. B. p. 129 (1883); Seeb. Br. B. iii. p. 583 (1885); Saunders, ed. Yarr. Brit. B. iv. p. 430 (1885); id. Man. Br. B. p. 435 (1889); Lilford, Col. Fig. Br. B. part xiii. (1890).
Fuligula fuligula, Salvad. Cat. B. Brit. Mus. xxvii. p. 363 (1895).

Adult Male.—General colour above black, with a slight greenish gloss, and with faint indications of grey frecklings; the wing-coverts like the back, including the bastard-wing and primary-coverts; the primaries black externally and at the ends of the inner webs, the latter being brown on the outer primaries, paler and inclining to white on the inner ones, where the light colour extends to the outer web also; the secondaries white, with a black band at the end, the innermost black, glossed with green; tail dusky-brown; crown of head with a tufted crest black, slightly glossed with purple; sides of face, neck, and throat black, with a very distinct purple gloss, changing to green under certain lights; fore-neck dusky-black, freckled with whitish bars on the lower part; remainder of under surface of body from the fore-neck downwards pure white, the vent and sides of lower flanks and under tail-coverts black; the flank-feathers brown at their ends; under wing-coverts and axillaries white, the lower primary-coverts pale ashy like the quill-lining; "bill dull leaden to bright greyish-blue, the nail and extreme tip black; feet varying in colour like the bill, often with an olivaceous tinge on the tarsi; webs varying from dusky to almost black, and the claws from deep brown to black; iris golden-yellow" (*A. O. Hume*). Total length, 14·5 inches; culmen, 1·5; wing, 7·9; tail, 2·1; tarsus, 1·2.

Adult Female.—Browner than the male, with obscure edges of paler brown to the feathers of the mantle; wings and tail as in the male, but the former without green gloss; the head only slightly crested, and, like the neck and throat, dark brown, inclining to blackish; the fore-neck rusty-brown; under surface of body from the fore-neck downwards pure white, mottled with dusky spots on the lower abdomen, vent, and under tail-coverts; the flanks washed with rusty-brown; the colours of the bill and feet more dusky than in the male. Total length, 15 inches; culmen, 1·5; wing, 7·4; tail, 2·0; tarsus, 1·3.

Young Birds.—Resemble the old female, but have no crest, and are more plentifully mottled with dusky-brown on the lower parts; there is also a patch of rusty- or whity-brown on the lores and chin. The young males are darker than the females, have blacker heads, and have the mottlings on the fore-neck continued over the chest; iris brown.

Nestling.—Almost entirely brown, with only a faintly indicated spot of lighter brown on each side of the lower back; forehead, eyebrow, and sides of face rather lighter brown, but the cheeks dusky-brown; under surface of body buffy-white, the fore-neck, sides of the body, and lower abdomen more dusky-brown.

Hybrids.—The Tufted Scaup has been known to cross with the Summer Duck, the Teal, and the Common and White-eyed Pochards.

Characters.—Distinguished by the white speculum, tipped with black, the very obvious crest, and the uniform back.

Range in Great Britain.—Athough better known as a winter visitor to the British Islands, the Tufted Scaup Duck breeds in many counties, from Norfolk to Northumberland, in Lancashire, Sussex, Dorset, and especially at Rainworth, Mr. Whitaker's estate in Nottinghamshire, as well as in other localities in the same county. I have also noticed it in pairs at Avington in Hampshire at the end of May, and believe that some remain to breed there. In Scotland it breeds on many of the lochs; and besides Lough Neagh, Lough Beg, the Shannon Lakes, and Co. Monaghan, where Sir Ralph Payne-Gallwey recorded its nesting in Ireland, it is now said by Mr. Ussher to breed in Fermanagh, Roscommon, and Sligo, and probably also on lakes in Longford and Westmeath.

Range outside the British Islands.—The present species breeds in the northern part of the Palæarctic Region from the Atlantic to the Pacific, and goes far south in winter, in the East visiting the Indian Peninsula, China, the Malayan Archipelago, and even extending to the Mariannes and Pelew Islands. In Europe its southern breeding-range is said by Mr. Seebohm to extend to about 50° N. lat., but its northern limit is 70° N. lat. in

Norway, 68° on the Yenesei, and 62° on the Pacific coast. In winter it is found throughout Southern Europe and the Mediterranean countries, and it extends down the Nile Valley to Abyssinia and Shoa. In the higher lakes of the latter countries some apparently remain to breed.

Habits.—Although found on the coasts in winter, the Tufted Scaup is much more of a fresh-water than a maritime Duck at any season of the year, and is strictly an inland species during the breeding-season. During the winter, too, it frequents inland lakes, where it is a shy and suspicious species, keeping aloof from the resident Mallards of the locality, but associating with the Wigeon in flocks, which keep well out of gun-shot in the middle of the water. When swimming, the Tufted Scaups show a great deal of their white breasts, and appear to sit lightly on the water, while their crested heads are very distinctly seen. They prefer lakes where there are reedy shores, rather than those with bare or sandy banks. In India, Mr. Hume states that he has seen as many as ten thousand together, covering the whole of the centre of the Kunkrowli Lake in Oodeypore. Like the Pochards, they make a great noise when they rise by striking the water with their feet. "Their food," writes Mr. Hume, "is more animal than vegetable. They constantly devour small fish, and one finds every kind of water-insect, worm, grub, and shells, small lizards, frogs, spawn, &c., in their stomachs. Still, like the rest of the Ducks, they eat the leaves, stems, and roots of water-plants freely, and I have several notes of birds which had dined, or breakfasted, entirely off some white shining onion-like bulb." The note is like that of the Pochards, a grating "Kurr, kurr," but not so loud as in the last-named birds.

Nest.—Placed near the water in a tussock or hump of grass, and made of sedge or grass lined with down. My friend Mr. Robert Read tells me that in Scotland he has found the nest amongst rushes and in open pastures amongst the grass; in the latter case the down is of great protective value, and the nest might easily be mistaken for a patch of dried cow-dung.

Eggs.—Laid in May and June, varying in number from eight to thirteen, ten or twelve being the usual complement. Mr. Robert Read writes to me:—"The last week in May and the first week in June are the best times to look for the eggs. Nine is the most usual full clutch, but I have found ten, twelve, fifteen, and even twenty eggs in a nest. The last-mentioned was, I believe, the produce of two females." The colour varies from drab-brown or stone-colour to greenish-brown. Axis, 2·2–2·4 inches; diam., 1·6–1·7.

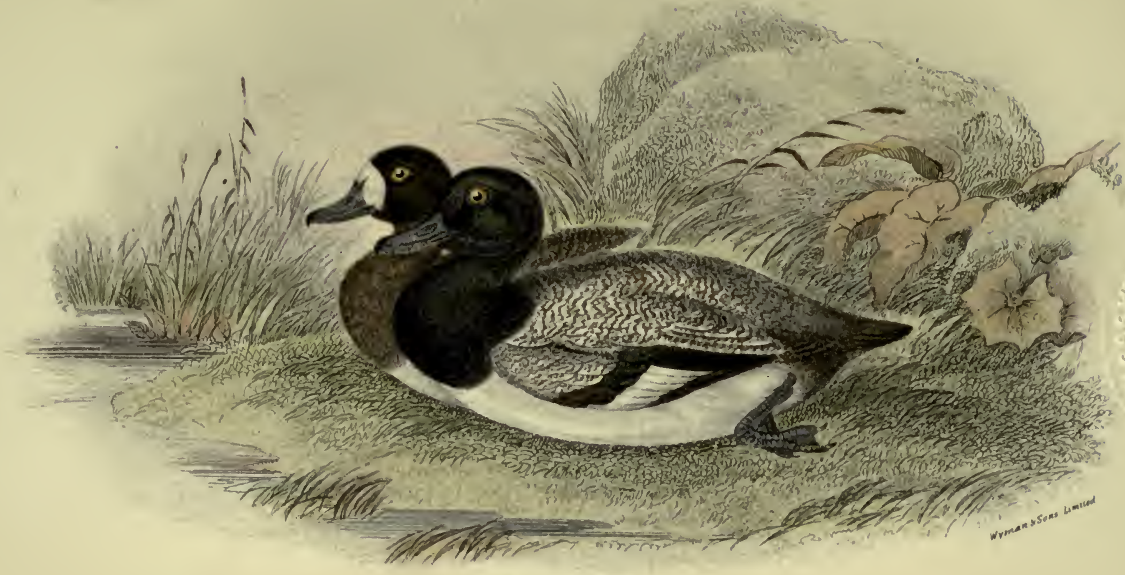
Down.—Very small, and dark chocolate-brown, with a scarcely perceptible whitish centre, the filamental tips being also brown.

II. THE SCAUP DUCK. FULIGULA MARILA.

Anas marila, Linn. Syst. Nat. i. p. 196 (1766).
Fuligula marila, Macg. Br. B. v. p. 116 (1852); Dresser, B. Eur. vi. p. 565, pl. 436 (1878); B. O. U. List Br. B. p. 129 (1883); Seebohm, Br. B. iii. p. 579 (1885); Saunders, ed. Yarr. Br. B. iv. p. 423 (1885); id. Man. Br. B. p. 437 (1889); Lilford, Col. Fig. Br. B. part xv. (1890); Salvad. Cat. B. Brit. Mus. xxvii. p. 356 (1895).

(*Plate LIX.*)

Adult Male.—Back light grey or white, pencilled with blackish vermiculations, less continuous on the upper scapulars, which in consequence look whiter than the rest of the back; the lower back black with a few whitish vermiculations; rump and upper tail-coverts black, with a large white patch on both sides; tail sooty-brown; wing-coverts black, finely pencilled with greyish or white vermiculations, which are less plentiful on the greater series and only appear at the ends of the latter; bastard-wing and primary-coverts dusky-blackish, the primaries dull ashy externally, and blackish at the end of the inner webs, which are for the rest drab-brown, forming a distinct "mirror"; the secondaries white with a broad black band at the end, the innermost black, glossed with oily-green; head, sides of face, and throat glossy dark green, changing to purple, according to the light in which the bird is held; hind-neck and upper mantle, sides of neck, fore-neck, and chest black with a bronzy gloss; the rest of the under surface of body white, from the chest downwards, with a few blackish vermiculations near the black chest-patch, and again on the lower abdomen; vent and under tail-coverts black; sides of body, under wing-coverts, and axillaries pure white, the outer coverts dusky, freckled with grey, the lower primary-coverts pale ashy like the quill-lining;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SCAUP DUCK.

BAILLIE'S INSTITUTION GLASGOW

"bill light greyish-blue or dull-lead colour, nail blackish; feet pale greyish-blue, darker on the joints; membranes dusky, claws black; iris rich yellow; the edges of the eyelids dusky" (*A. O. Hume*). Total length, 17·5 inches; culmen, 1·75; wing, 8·7; tail, 2·3; tarsus, 1·5.

Adult Female.—Very much browner than the male, with a few grey specklings on the back; the lower back and rump somewhat blacker than the rest of the upper-parts; wings as in the male, but the coverts darker and the vermiculations obsolete; crown of head and nape dull reddish-brown, with a large white patch on the lores; the chin with a white spot; the chest mottled, with reddish-brown bases to the feathers; breast and abdomen white; the lower abdomen and under tail-coverts mottled with dusky; the sides of the body reddish-brown; "bill as in the male, but darker; feet dull leaden-grey with the webs dusky" (*A. O. Hume*). Total length, 16·0 inches; culmen, 1·6; wing, 8·2; tail, 2·6; tarsus, 1·4.

Young Birds.—Resemble the old female, and have the white chin-spot. The young males, according to Count Salvadori, can be distinguished by their darker and richer coloration. In the second year the young male resembles the adult, but has less green gloss on the head and neck, and the black feathers on the breast are margined with white; the black under tail-coverts are more or less vermiculated and in the vermiculations on the lower mantle, scapulars, and wing-coverts the dark brown colour predominates over the white.

Hybrids.—The Scaup has been known to interbreed with the White-eyed Pochard and the Golden-eye.

Characters.—Resembles the Tufted Scaup in having the speculum white, tipped with black, but has no crest, and the back is greyish-white, vermiculated or lined across with zigzag black markings.

Range in Great Britain.—The Scaup is a winter visitor, and is common on our coasts from autumn to spring, with the exception of a few localities, such as the Outer Hebrides and the south coast of Ireland. It has been said to breed on Loch Leven in Scotland, where Mr. A. C. Stark states that he found the nest.

Range outside the British Islands.—A circumpolar species, according to Count Salvadori, who observes that he is unable to distinguish the American Scaup or the Chinese Scaup from the European species. It breeds in Scandinavia up to 70° N. lat. and above the limits of forest-growth across Northern Asia to Kamtchatka, and again above 50° N. lat. of North America. In other parts of its range it occurs only in winter, when it visits the Mediterranean and extends into North-western India, as well as to Japan, China, and Formosa. In North America it wanders south in winter and reaches Mexico and the West Indian Islands. *Fuligula affinis* of North America has also been recorded as British, as also *F. collaris*, but only from specimens in Leadenhall Market, and these records have been ignored by Mr. Howard Saunders and recent writers.

Habits.—The Scaup is principally a maritime Duck, excepting during the breeding-season, when it retires inland to nest. From Mr. Seebohm's notes on the habits of the species, I extract the following, as no one has had better opportunities for observing the species in a wild state:—"The Scaup is most active when the sun shines from the north; that seems to be its favourite feeding-time; and then its loud, harsh scream may be heard as the drake calls to his mate to leave her eggs covered warmly up in a blanket of down, and to come away from her snug nest among the bilberries on the adjacent bank-side and join him on the lake, or perhaps have a swing down the river to the delta to pick up anything that may be left on the strand at low tide. Of all the cries of the Ducks that have come under my notice, I think that of the Scaup is the most discordant. None of them are very musical, perhaps, but if you imagine a man with an exceptionally harsh, hoarse voice, screaming out the word *scaup* at the top of his voice, some idea of the note of this Duck may be formed. It is said that when this harsh note is uttered the opening of the bill is accompanied with a peculiar toss of the head. The ordinary alarm-note during flight is a grating sound like that made by the Tufted Duck.

"The Scaup is a very gregarious and sociable bird. In winter it is almost always seen in flocks, frequently associated with other Ducks, and in summer small parties are constantly seen coming and going from their feeding-grounds. When alarmed, they generally seek safety by diving, but if they find themselves obliged to take wing, they get up from the water, one after another, with a great splash, but once fairly launched in the air, they appear to get away very quickly, though their wings are obliged to vibrate at a great speed and with considerable noise. They both swim and dive with perfect ease, and obtain much of their food under water.

"Although the Scaup, when cooked, is said to taste very fishy, it does not appear to be much of a fish-eater. Shell-fish are its favourite food, but it varies its diet with crustaceans, the larvæ of various insects, and with some vegetable matter. In confinement Montagu found it remarkably tame, feeding eagerly at once on soaked bread, and after a few days on barley."

Nest.—According to Mr. Seebohm, "the Scaup generally selects some sloping bank, not far from water, but high enough from the edge to be secure from floods, on which to build her nest. It is always well concealed, and seldom to be found except by accidentally frightening off the sitting Duck. Sometimes it is placed under a willow or juniper bush, but more often in the open, carefully hidden in some hole in the rough ground surrounded by cranberries or bilberries struggling amidst tufts of sedge or cotton-grass. The hole is lined with dry broken sedge, and, as the eggs are laid, an accumulation of down is formed, sufficient to keep them warm when the Duck leaves them to feed."

Eggs.—From six to nine in number, of a pale greenish-grey or stone-colour. Messrs. H. J. and C. E. Pearson once found twelve eggs in a nest in Iceland. Axis, 2·55–2·65 inches; diam., 1·7.

Down.—Larger than that of the Tufted Scaup, but of about the same character. Dark chocolate-brown, with paler brown filamentous tips, and a small star of dull white in the middle.

THE GOLDEN-EYED DUCKS. GENUS CLANGULA.

Clangula, Leach, in Ross's Voy. Disc. App. p. xlviii. (1819).
Type, *C. clangula* (L.).

The genus *Clangula*, for which I adopt the well-known English name of the "Golden-eyes," belongs to the plain-winged section of the Diving Ducks, in which the quills are uniform and have no light "mirror" on the inner webs. They differ from the Eider-Ducks in having no patches of stiff feathers on the head, which is very fully crested. The tail is of moderate length, and its feathers are rounded; the edges of the upper mandible are not bent inwards; and there is a distinct difference in the colour of the sexes, the males having a glossy black head, and the females a brown one (cf. Salvad. Cat. B. Brit. Mus. xxvii. p. 326).

I. THE GOLDEN-EYED DUCK. CLANGULA CLANGULA.

Anas clangula, Linn. Syst. Nat. i. p. 201 (1766).
Anas glaucion, Linn. *tom. cit.* p. 201 (1766).
Clangula chrysophthalma, Macg. Br. B. v. p. 174 (1852).
Clangula glaucion, Dresser, B. Eur. vi. p. 595, pl. 440 (1875); B. O. U. List Br. B. p. 131 (1883); Saunders, ed. Yarr. Br. B. iv. p. 435 (1885); id. Man. Br. B. p. 429 (1889); Salvad. Cat. B. Brit. Mus. xxvii. p. 376 (1895).
Fuligula clangula, Seebohm, Br. B. iii. p. 590 (1885); Lilford, Col. Fig. Br. B. part xi. (1889).

Adult Male.—General colour above black, including the whole of the back and rump; scapulars white or half black and white, giving a streaked appearance to the sides of the back, the external scapulars white with black margins; wing-coverts pure white, except those near the edge of the wing, which are black; the greater series white with a concealed black bar at the base; bastard-wing, primary-coverts, and quills black; secondaries pure white, the inner ones velvety-black with a green gloss; upper tail-coverts and tail cindery-grey, the latter fringed with whity-brown at the ends; head fully crested metallic-green, as also the nape and entire sides of the face, with purplish reflections under certain lights; at the base of the bill a large white spot; throat velvety-black with a shade of bronzy-green; rest of the under surface from the lower throat downwards pure white, the feathers on the thighs and vent dusky blackish, the flank-feathers edged with black on their inner webs, imparting a streaked appearance;

axillaries and under wing-coverts black, the quill-lining somewhat more ashy; "bill bluish- or greenish-black, in rare instances with an orange spot or bar near the tip of the upper mandible; feet intense orange-yellow, the webs dusky; iris reddish or orange-yellow; eyelids reddish-dusky" (*A. O. Hume*). Total length, 18·0 inches; culmen, 1·55; wing, 8·9; tail, 3·7; tarsus, 1·55.

Adult Female.—Different from the male. Upper surface of body slaty-grey, the feathers with dusky bases; lower back and rump dusky-black, becoming more slaty on the upper tail-coverts; the wing-coverts slaty-grey like the back, with an irregular white patch caused by the outer lesser coverts being white; median coverts with white spots at the ends and the central greater coverts white with black tips; bastard-wing, primary-coverts, and quills blackish, the primaries browner on the inner webs; secondaries white, the inner secondaries half black and half white and the innermost ones entirely black; head and throat all round chocolate-brown, followed by a white collar across the lower throat; breast and abdomen pure white; fore-neck, chest, and sides of the body slaty-grey, mottled with dusky centres to the feathers; under wing-coverts, axillaries, and quill-lining dull slaty; "bill brownish-black, more dusky than in the males, and generally showing a yellowish-red or orange spot or bar near the tip of the upper mandible, which in some forms a terminal band at the tips of both mandibles, never, however, including the nail, which remains black or dusky" (*A. O. Hume*). Total length, 17·5 inches; culmen, 1·3; wing, 7·6; tail, 3·2; tarsus, 1·4.

Young Birds.—According to Count Salvadori, resemble the old females, but are duller in colour; the pale collar round the neck is less distinct, and the grey feathers on the breast have white margins. In his first breeding-dress, the young male has less white on the scapulars, the white on the hinder lower neck is mottled with brown, as also is the white spot at the base of the bill. The latter, in the young birds, resembles that of the old females, and, according to Mr. Hume, in quite young birds, the iris is white or very pale yellow.

Nestlings.—Dark brown on the upper-parts, and paler brown on the breast and flanks, shading into white on the throat and into pale grey on the belly (*Salvadori*).

Hybirds.—The Golden-eye has been known to interbreed with the Smew, Pochard, Scaup, and Buffel-headed Duck.

Characters.—This species is very easily recognisable by its coloration, and cannot well be confounded with any of the other British Ducks. The female can be told from that of any of the Diving Ducks by its brown axillaries and white speculum, but it has no white patch on the ear-coverts as in *C. albeola.*

Range in Great Britain.—A winter visitor, frequenting inland lakes from October to May. It has been doubtfully recorded as breeding in Scotland, but is best known as a winter visitant to that country and to Ireland, resorting to the coasts when the inland waters are frozen over.

Range outside the British Islands.—The Golden-eye breeds in Northern Europe up to 70° N. lat., in Scandinavia and in Russia to about 58°, and sparingly in Holstein, Pomerania, and Eastern Prussia. Its breeding-range further extends from the Caucasus throughout Siberia and Arctic America, for Count Salvadori confesses his inability to separate the European and American Golden-eyes. In the New World its winter range extends as far south as Mexico and the Greater Antilles. In Europe it visits the Mediterranean in winter, and in the East occurs in China at this season, and even extends to North-western India, but very rarely. Barrow's Golden-eye (*Clangula islandica*) has been supposed to have occurred in England, but the evidence is not considered sufficient. The latter species inhabits North America, Greenland, and Iceland, and differs from the common species in having the head and neck glossy blue-black, with a large triangular patch across the lores. The female differs from the female Golden-eye in being larger and in having a broader grey chest-band.

Habits.—Although frequenting, as a rule, lakes, rivers, and marshy lands, the Golden-eye also affects the sea-coasts in winter. Mr. Seebohm observes:—"It is remarkable for its noisy flight, its rapidly moving wings whistling in the wind as it passes overhead. It also makes a great splashing in the water when it rises, but does not readily take wing, as it is a most expert swimmer and diver. It is one of the shyest of Ducks, and very difficult to shoot. It makes the same grating sound, when calling to its fellows during flight, as the Scaup and Tufted Duck. It is a clumsy walker on the land, and lives almost entirely on the water, feeding on nearly every kind of both animal and vegetable food that its unrivalled powers of diving enable it to find at the bottom: small fish, young frogs, shell-fish, insects, the seeds or buds or tender leaves of water-plants, nothing comes amiss to it."

"But," he continues, "the most remarkable fact in the history of the Golden-eye is its habit of occasionally perching on the bare branch of some forest-tree, and of discovering a hole in the trunk, sometimes quite a small one, but leading to a hollow inside, where it deposits eggs on the rotten chips of wood without any nest, like a Woodpecker."

Nest.—As before stated by Mr. Seebohm, the nest is in the hole of a tree, but, where this is not available, the Golden-eye will place its nest on the ground or on the tops of pollard-willows. Sometimes the nest is placed at a height of twelve, and even twenty-five feet from the ground, and the old bird conveys the young to the water, holding it between its bill and its breast. Mr. Robert Read writes to me:—"I have observed these birds on the fresh-water lakes in Scotland as late as May, and keepers tell me that they have seen them in every month of the year except June. The 'Knipa,' as it is called, is well-known in Sweden, and in Dalsland, about 59° N. lat. I saw a pair in June, 1894, on a lake, and was shown the place wherein they had nested the previous year. It was in a hole, about fifteen feet up, at the main fork of an old black poplar standing in a churchyard beside the water's edge." In Lapland and Finland the natives put up boxes for the convenience of the Golden-eyes, and regularly pilfer the eggs of the too confiding birds.

Nest.—None, as recorded above, but down, as in the case of all Ducks, is used as a lining to the hole or nesting-place selected.

Eggs.—From ten to thirteen in number, but many more are often found. When fresh they are of a greyish-green colour, but fade to dull green or olive-green.

Down.—Greyish-white, with filamentous tips of the same colour, and a large but not very conspicuous spot of white in the centre.

THE BUFFEL-HEADS. GENUS CHARITONETTA.

Charitonetta, Stejn. Bull. U.S. Nat. Mus. No. 29, p. 183 (1863).
Type, *C. albeola* (Linn.).

Count Salvadori does not separate the Buffel-heads from the Golden-eyes, though he admits the difference in the style of their plumage, and the structural character of the nostrils, which are situated nearer to the base of the bill than to its tip, being exactly the opposite to the features of the nostril in the genus *Clangula*. In my opinion, therefore, the genus *Charitonetta* should be recognised.

I. THE BUFFEL-HEADED DUCK. CHARITONETTA ALBEOLA.

Anas albeola, Linn. Syst. Nat. i. p. 199 (1766).
Clangula albeola, Macg. Br. B. v. p. 185 (1852); Dresser, B. Eur. vi. p. 589, pl. 439 (1877); B. O. U. List Br. B. p. 132 (1883); Saunders, ed. Yarr. Br. B. iv. p. 442 (1885); id. Man. Br. B. p. 441 (1889); Salvad. Cat. B. Brit. Mus. xxvii. p. 376 (1895); Lilford, Col. Fig. Br. B. part xxx. (1895).
Fuligula albeola, Seebohm, Br. B. iii. p. 588 (1885); Lilford, Col. Fig. Br. B. part xi. (1889).

Adult Male.—General colour above black, including the back and scapulars, the outermost of the latter being white, edged with black; wing-coverts white, those round the edge of the wing black, the greater series with concealed blackish bases; bastard-wing, primary-coverts, and primaries black; the secondaries white with blackish bases to the inner webs, the inner secondaries velvety-black like the back; upper tail-coverts ashy-grey; tail-feathers slaty-grey; lores and fore-part of crown green, verging into purple on the hinder crown and crest; the sides of the face from below the eye in a line to the cheeks white, including the ear-coverts and nape, which is crested;

the fore-part of the cheeks green, with steel-blue reflections; the hinder cheeks purplish, with bronzy reflections, and verging into bronzy-green on the sides of the neck; the hinder neck crested and dull steel-green; throat dusky-black, with a purplish gloss; entire under surface of body from the lower throat downwards pure white, the flank-feathers edged with black, the lower abdomen slightly shaded with greyish; axillaries slaty-grey, the inner ones white; under wing-coverts white, mottled with dusky bases to the feathers; bill bluish-black; feet and toes pinkish, the webs and joints darker; iris dark brown. Total length, 15·0 inches; culmen, 1·3; wing, 6·7; tail, 2·8; tarsus, 1·2.

Adult Female.—Different from the male. General colour above sooty-blackish, darker on the lower back and rump; wings sooty-blackish, some of the greater coverts with a white spot before the end of the outer web; quills blackish, the secondaries externally white, forming a speculum; tail dusky-brown; fore-part of crown, lores, throat, and neck all round sooty-brown; the hinder crown and nape blacker, and decidedly crested; from below the eye a broad, white band extending across the ear-coverts to the sides of the neck; under-surface of body white, greyish across the fore-neck, on the sides of the body, and on the under tail-coverts; axillaries sooty-brown, or white with brown centres; under wing-coverts white, mottled with brown bases; bill dusky, inclining to plumbeous at the end, and along the commissure; feet and toes pale bluish-pink, the webs and joints darker; iris dark brown. Total length, 12·0 inches; culmen, 1·0; wing, 5·9; tail, 2·4; tarsus, 1·1.

Young Birds.—Resemble the old female in plumage.

Characters.—Apart from the differences in structure recorded above, the male can be easily told by the varying gloss on the head, and the large patch of white on the sides of the face. The female has the head and neck greyish-brown, with a white spot on the ear-coverts and a white wing-speculum.

Range in Great Britain.—At least five authentic instances of the occurrence of the Buffel-headed Duck have been recorded in Great Britain. Of these two are Scotch and three English.

It has never been met with on the continent of Europe, and appears to be only a straggler to Greenland.

Range outside the British Islands.—This is a North American species, breeding from Labrador to Alaska, and occurring even on the Commander Islands; migrating south in winter to Mexico and the Greater Antilles.

Habits.—Resemble those of the Golden-eye, even to the mode of nesting in the hole of a tree. Very little has been written about the species by the explorers in Alaska, but the stomach of a female bird shot in Minnesota by Mr. A. C. Stark was crammed with small red worms. The bird is also known to be herbivorous, and to devour land and marine molluscs, shrimps, and leeches. Like the Golden-eyes, it is a first-rate diver, and in the States it is often called the "Butter-ball," from its extreme fatness.

Nest.—Placed in the hole of a tree, and lined with down.

Eggs.—From six to ten in number.

THE LONG-TAILED DUCKS. GENUS HARELDA.

Harelda, Stephens, Gen. Zool. xii. part 2, p. 174 (1824).

Type, *H. glacialis* (Linn.).

The peculiar characters of this genus are the uniformly coloured primaries, which show no distinct "mirror," the variegated nature of the plumage, the fully-crested head, and the long central tail-feathers. The edges of the upper mandible are partly bent inwardly.

I. THE LONG-TAILED DUCK. HARELDA GLACIALIS.

Anas glacialis, Linn. Syst. Nat. i. p. 303 (1766).

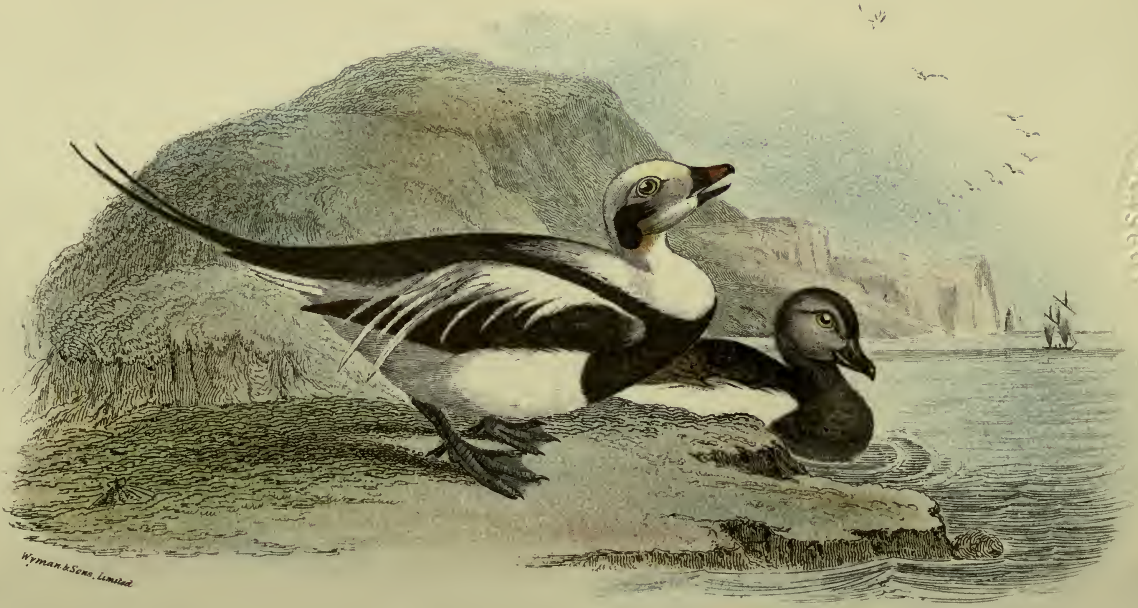
Harelda glacialis, Macg. Br. B. v. p. 192 (1852); Dresser, B. Eur. vi. p. 617, pls. 443, 444 (1875); B. O. U. List Br. B. p. 132 (1883); Saunders, ed. Yarr. Br. B. iv. p. 446 (1885); id. Man. Br. B. p. 443 (1889); Lilford, Col. Fig. Br. B. part xxx. (1895); Salvad. Cat. B. Brit. Mus. xxvii. p. 389 (1895).

Fuligula glacialis, Seebohm, Br. B. iii. p. 598 (1885).

(*Plate LX.*)

Adult Male.—General colour above black, the scapulars dove-

INSTITUTION
GLASGOW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LONG-TAILED DUCK.

grey and elongated into narrow white plumes, forming a band on each side of the back; wing-coverts black, the greater series slightly inclining to bronzy-brown; bastard-wing, primary-coverts, and primaries black, the latter inclining to ashy-brown on the inner webs; the secondaries bronzy-brown, the innermost black; long centre tail-feathers black, the outer ones white; crown of head white, the hind-neck greyish-white, and also the sides of the neck; lores, feathers round the eye, and sides of face lavender-grey, separated from the bill by a line of white, and followed on the ear-coverts by a large patch of black, extending to the sides of the neck; throat white, joining the sides of the neck; fore-neck, chest, and breast black, glossed with bronzy-brown; remainder of under surface of body white, extending over the sides of the breast; the sides of the body washed with delicate lavender; under wing-coverts and axillaries smoky-brown; quill-lining grey; bill blackish lead-colour, as well as the nail, with the intervening portion pinkish-orange; feet leaden-blue, the webs and joints blackish; iris reddish-brown. Total length, 21·0 inches; culmen, 1·1; wing, 8·8; tail, 3·2; long centre feathers, 8·5; tarsus, 1·4.

The pied plumage described above is also that of the breeding-dress, but the post-nuptial or summer plumage is very different, the general tone of the upper surface being black; the feathers of the upper mantle and scapulars have broad, rusty-brown edges; the wings are blackish-brown, with an obscure bronzy-brown speculum; the whole of the head and neck, as well as the entire breast, are blackish-brown, somewhat paler and more chocolate-brown on the latter; lores and fore-part of cheeks white, extending in a patch behind the eye; abdomen and under surface white, as in the breeding-plumage.

Adult Female.—Somewhat resembles the post-nuptial plumage of the male, but has not the long tail-feathers of the latter. The general colour is brown, the feathers of the upper surface being edged with olive-grey or sandy-rufous, the scapulars and rump especially showing the olive-grey tinge; wings brown, the feathers edged with grey, but showing no distinct speculum; crown of head blackish-brown, sharply defined against the hind-neck, which is ashy-brown; eyebrow and lores pale brown, deepening into darker brown on the ear-coverts, which are surmounted by a whitish line; throat greyish, browner on the chin and lower throat; sides of neck dull white; fore-neck and chest grey, slightly tinged with ochre; remainder of under surface white; under wing-coverts and axillaries brown. Total length, 15·5 inches; culmen, 1·1; wing, 8·5; tail, 3·0; tarsus, 1·3.

Young Males.—Resemble the old female, but are more uniform above and do not show the olive-grey margins; the back and wings black; the scapulars lighter brown, with yellowish-brown margins and the feathers more pointed than in the female; head and neck marked as in the female, but the throat browner; the bronzy speculum on the wing is evident.

Nestling.—Dark brown, the head blacker, as also the sides of the face; a white loral spot at the base of the bill and a mark of white above and below the eye; throat white, extending on to the sides of the neck, but not joining behind; a band of brown across the fore-neck; remainder of under surface greyish; the sides of the body and flanks brown.

Range in Great Britain.—A winter visitant to our coasts, being more plentiful in Scotland than in England, and mostly so in the Hebrides, where it is known by the Gaelic name of *Lach Bhinn*, or the Musical Duck. In the Orkneys and the Shetland Isles it is called "Calloo," from the note uttered by the male. Mr. Howard Saunders believes that the Long-tailed Duck breeds on some of the unfrequented lochs of Yell and Mainland in the latter group, though absolute proof is still wanting. To Ireland it is only an occasional visitor.

Range outside the British Islands.—The Long-tailed Duck breeds throughout the Arctic Regions from Greenland and Iceland to Eastern Siberia, and again in Arctic America. In the New World it is generally called the "Old Squaw." In winter it visits the United States, and in Europe it has been found south to the northern countries of the Mediterranean, and it occurs in Japan and China at that season of the year, and also winters on Lake Baikal and the Caspian Sea.

Habits.—In the arctic habitat, which this Duck affects during the summer, it is a common bird, and it never appears to wander very far south, some individuals even wintering in the north. It is less gregarious than some of the arctic Ducks, and is an extremely good diver. After the young are hatched about the end of June, they frequent ponds and marshy lakes, but as autumn approaches they seek the small bays and creeks along the coast.

Mr. E. W. Nelson gives the following note on the species in his "Report on Natural History Collections from Alaska":—"During all the spring-season, until the young begin to hatch, the males have a rich musical note, imperfectly represented by the syllables "á-lēēdle-á, á-lēēdle-á," frequently repeated in deep, reed-like tones. Amid the general hoarse chorus of water-fowl at this season, the notes of the Old Squaw are so harmonious that the fur-traders of the Upper Yukon have christened it the "Organ Duck"—a well-merited name. I have frequently stopped and listened with deep pleasure to these harmonious tones, while traversing the broad marshes in the dim twilight at midnight, and while passing a lonely month on the dreary banks of the Yukon delta, I have lain in my blankets many hours at night and listened to these rhythmical sounds, which, with a few exceptions, were the only ones to break the silence. These notes are somewhat less common during the day. The male is often seen swimming rapidly about the female, his long tail-feathers raised to an angle of about 75 degrees, and vibrating rapidly from side to side as he passes before his mate, uttering the love-note at short intervals. If he becomes too pressing in his suit, the female suddenly dives and is instantly followed by her partner, and then a moment later they appear and take wing, and a playful chase ensues, the two diving at full speed and flying above or below in rapid succession, until they are tired. It is a common thing for two or three males to join in this "follow-my-leader" kind of game after the female, and in the end the latter usually flies to some secluded pool with her choice, whilst the discomfited suitors move off in search of some easier prize. Several males continue to utter their musical notes whilst chasing a female, and make a very pretty chorus."

Nest.—According to Mr. Nelson, an unusual amount of dry grass-stems and down picked from the parent's breast composes the nest, and if the eggs are left, they are carefully hidden in the loose material. Messrs. H. J. and C. E. Pearson, who found the species breeding in Iceland, write as follows:—"We found eggs from the 20th of June to the 18th of July, most of the nests being placed on islands. On the 20th of June we flushed the bird from a nest of six eggs, which was several hundred yards from the water, on a bare hill-side of black sand. There was no material in the nest except down, the black colour of which would form a perfect protection when the Duck covered the eggs with it in the ordinary course. Not one of the many nests observed was placed in a hole, but they were often in a hollow between two mounds of grass. In such situations the outer part was always of grass, and the bird carefully covered the eggs with the material on leaving, sometimes forming a splendid imitation of an old nest. The only safe rule was to put your hand well to the bottom of every nest, whether it looked fresh or old."

Eggs.—Six or seven in number; clay-brown to greenish-grey, or dull green. Axis, 2·0–2·25 inches; diam., 1·5.

Down.—Very dark, deep chocolate-brown, almost blackish, the filamentous tips also dark brown; in the centre a small star or "eye" of white.

THE HARLEQUIN DUCKS. GENUS COSMONETTA.

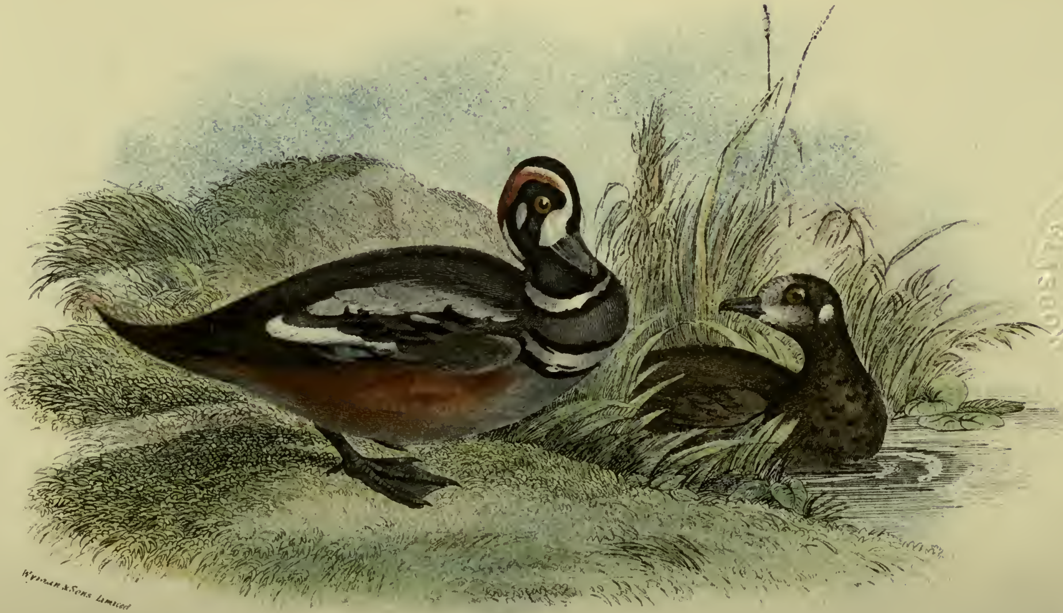
Cosmonetta, Kaup, Natürl. Syst. p. 196 (1829).

Type, *C. histrionica* (Linn.).

A single species, the Harlequin Duck, constitutes the genus *Cosmonetta*, and the characters of the genus are given by Count Salvadori as consisting mainly of the peculiar pattern of plumage which is displayed by the species in question. This is, however, so remarkable that recognition is easy. The Harlequin Duck belongs to the section of Diving Ducks, in which the primaries are nearly uniform and show no light "mirror," as in the Pochards, while there is no perceptible crest, and the bill is conical and tapers almost to a point.

PLATE LXI.

BAILLIE'S INSTITUTION GLASGOW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HARLEQUIN DUCK.

I. THE HARLEQUIN DUCK. COSMONETTA HISTRIONICA.

Anas histrionica, Linn. S. N. i. p. 204 (1766).
Clangula histrionica, Macg. Br. B. v. p. 169 (1852).
Cosmonetta histrionica, Dresser, B. Eur. vi. p. 609, pls. 600, 613 (1877); B. O. U. List Br. B. p. 132 (1883); Saunders, ed. Yarr. Br. B. iv. p. 452 (1885); id. Man. Br. B. p. 445 (1889); Lilford, Col. Fig. Brit. B. part xxx. (1895); Salvad. Cat. B. Brit. Mus. xxvii. p. 395 (1895).
Histrionicus minutus, Dresser, B. Eur. vi. p. 613 (1877).
Fuligula histrionica, Seebohm, Br. B. iii. p. 594 (1885).

(*Plate LXI.*)

Adult Male.—General colour above slaty-blue, the scapulars white edged with slaty-blue and forming a band down each side of the back; lower back duller slate-colour; rump and upper tail-coverts purplish-black, with a few white-tipped feathers on each side of the latter; tail sooty-black; wing-coverts dark slaty-grey; two of the median coverts with a round white spot; the central greater coverts tipped with white, before which is a bar of metallic-purple; bastard-wing, primary-coverts, and primaries blackish-brown, the latter lighter brown on the inner webs; the secondaries externally purplish-blue, the inner ones for the most part white, bordered with black on the outer webs and grey on the inner ones; centre of crown blue-black, bordered on each side by a broad band of chestnut, which is separated on its anterior part by a line of white, which is continuous with a white patch occupying the lores and fore-part of cheeks; eyebrow, sides of head, and neck dark slaty-blue, relieved by a white spot on the ear-coverts and another band of white skirting the sides of the nape; round the lower throat a white collar, skirted above and below by a purplish-black band and almost meeting on the hind-neck; fore-neck and chest light slaty-blue like the mantle, with which it is continuous; on either side of the chest a broad vertical band of white, bordered above and below with purplish-black; remainder of under surface from the chest downwards dark smoky-brown, inclining to purplish-black on the sides of the vent and under tail-coverts; sides of the body bright chestnut; axillaries and under wing-coverts smoky-brown, some of the latter with whitish edges; bill dark leaden-blue, the nail lighter;

feet brown, the webs of the toes blackish; iris dark brown. Total length, 15·5 inches; culmen, 1·0; wing, 7·7; tail, 3·8; tarsus, 1·35.

Adult Female.—Totally different from the male. Uniform sooty-brown, darker brown on the lower back, rump, and upper tail-coverts; wings plain sooty-brown, without any sign of a speculum; head and neck sooty-brown, darker on the crown and lighter on the throat, and more chocolate-brown on the chest and sides of the body; in front of the eye a dusky patch, above which is a spot of white; lores and sides of face to the hinder level of the eye whitish, mottled with smoky-brown; on the ear-coverts a spot of white; breast whitish, mottled with dusky bases to the feathers; the lower abdomen and under tail-coverts, as well as the axillaries and under wing-coverts, sooty-brown. Total length, 16·0 inches; culmen, 1·0; wing, 7·6; tail, 3·6; tarsus, 1·4.

Young Males.—Resemble the old female, but are somewhat darker in colour. In their first spring plumage they show some white on the chin and throat, and have a browner abdomen than the adults, with less chestnut on the flanks and less white on the scapulars.

Nestling.—Dark brown, with a white spot on each wing, and another on each side of the rump; underneath white, shaded with brown on the breast and flanks; the throat white.

Range in Great Britain.—Of very rare occurrence in our islands, most of the records being extremely doubtful, some other species having been mistaken for the Harlequin. A specimen in Mr. Whitaker's collection was obtained from Scarborough in the autumn of 1862, and two others were shot near the Farne Islands in December, 1886.

Range outside the British Islands.—The Harlequin Duck is strictly an arctic species, nesting in the extreme north of both the Old and New Worlds. In North America it breeds as far south as Newfoundland, the Northern Rocky Mountains, and the Sierra Nevada, as far as 38° N. lat., according to Mr. Ridgway, wintering in the Middle States and the Ohio Valley, and being found in winter as far south as California. It is resident in Iceland and visits Greenland in summer, and in Finland and near Archangel it is rare, though it has been said to breed in the Ural Mountains. In winter the birds which have bred in Eastern Siberia go south as far as the Kurie Islands and Japan.

Habits.—Although found in large flocks off the arctic sea-coasts in winter, in summer the Harlequin Duck frequents torrents and rushing streams. Messrs. H. J. and C. E. Pearson have given the following note on the bird in Iceland:—"This species is one of the latest Ducks to breed, our first eggs being taken on July 1st, and fresh eggs were brought to us on the 18th. . . . . Flocks of more than thirty males were seen together on several occasions, and formed a beautiful picture, some sitting on the rocks, and others swimming among rapids that few other birds would care to frequent."

Nest.—"Generally speaking," write Messrs. Pearson, "the nest is placed within six feet of the water, a rapid stream being preferred. On the 11th of July one of us visited some islands in a river, the remains of an ancient flow of lava. The lava had formed a dam across the river, which had afterwards broken through, forming four channels, and down these the waters ran like a mill-race, so that it was difficult to find a place where even Iceland ponies could cross. On these islands were six nests with eggs, three of them only two feet from the water, and placed under the leaves of wild angelica, the others in holes of the banks close to the water, and protected by a screen of trailing plants. Many of the nests contained but little down, though several of the eggs were much incubated. The down of this Duck is much larger than that of most other species we have taken, individual pieces having sometimes a diameter of about 1⅜ inch. There were many old nests in these holes, showing the islands to have been a favourite breeding-place for years. The dog put the Duck off a nest of seven eggs on the 9th. This was placed about ten yards from the water, under a birch-bush, but we are sure that this is a very unusual distance from water."

Eggs.—From seven to ten in number; cream-colour, smooth, and glossy. Axis, 2·2–2·4 inches; diam., 1·7–1·75.

Down.—Light greyish-brown, with a small white "eye" and whitish filamentous tips.

THE RUFOUS-BREASTED EIDER DUCKS. GENUS HENICONETTA.

Eniconetta, G. R. Gray, List Gen. B. 1840, p. 75.

Type, *H. stelleri* (Pall.).

Although recognised as one of the Eider Ducks, and placed by many naturalists in the genus *Somateria*, Steller's Duck, which is the sole representative of the genus, possesses certain structural characters which cause it to be placed in a genus apart. The edges of the upper mandible are bent inwardly, the lower mandible has the apical portion flat and almost spatulated, and both male and female have a metallic alar speculum (cf. Salvad. Cat. B. Brit. Mus. xxvii. p. 327).

There is only one species of the genus *Heniconetta*, viz., the following:—

I. STELLER'S EIDER DUCK. HENICONETTA STELLERI.

Anas stelleri, Pallas, Spic. Zool. fasc. vi. p. 35 (1769).
Stelleria dispar, Macg. Br. B. v. p. 164 (1852).
Somateria stelleri, Dresser, B. Eur. vi. p. 649, pl. 447 (1871); Saunders, ed. Yarr. Br. B. iv. p. 468 (1885); Seebohm, Br. B. iii. p. 613 (1885); Saunders, Man. Br. B. p. 451 (1889).
Heniconetta stelleri, B. O. U. List Br. B. p. 133 (1883); Salvad. Cat. B. Brit. Mus. xxvii. p. 419 (1895).

Adult Male.—General colour above blue-black, from the lower hind-neck to the tail, the latter being also black; wing-coverts and scapulars pure white, the long ones slightly sickle-shaped, metallic purplish-blue, with a longitudinal white centre; bastard-wing, primary-coverts, and quills dusky-blackish, darker on the outer web and the end of the inner web, this dark portion having a purplish gloss; the secondaries metallic-purple, tipped with white, forming a speculum, the inner ones white on the inner web, the innermost sickle-shaped, purple externally, white internally; head satiny-white, with a faint greenish spot on the lores; eyelid purplish-black, wider below; nape greenish, with a purplish-black spot on each side; malar-line and throat purplish-black, separated from the chest by a band of white across the fore-neck, which joins the white on the sides of the neck; centre of the chest and upper breast chestnut; fore-neck and sides of the chest paler and more cinnamon, extending down the sides of the body to the lower flanks, which are whiter; centre of the breast and abdomen, as well as the sides of the vent and under tail-coverts, black, the latter glossed with purple; under wing-coverts and axillaries white; on each side of the upper breast a patch of purplish-black, some of the feathers broadly-edged with this colour; bill lead-colour, horny-white at tip; feet and toes lead-colour, webs blackish-grey; iris dark brown. Total length, 17·0 inches; culmen, 1·6; wing, 8·3; tail, 3·5; tarsus, 1·4.

Adult Female.—Blackish above, mottled with rufous bars, very indistinct on the lower back and rump, but more pronounced on the hind-neck and mantle; wings dark brown; the greater coverts tipped with white, forming an upper margin to the speculum on the secondaries, which are externally metallic-purple, and broadly tipped with white; the innermost secondaries slightly falcate, externally purple, and with a whitish streak down the centre; head and neck rufous-brown, slightly mottled on the hind-neck and lower throat with rufous-buff; fore-neck and chest dark chestnut, mottled with black centres to the feathers; breast and abdomen blackish-brown, the sides of the body slightly more chestnut; under wing-coverts white, those round the edge of the wing blackish, with pale edges; lower primary-coverts and quill-lining ashy-grey. Total length, 18·0 inches; wing, 8·5.

Young Birds.—Brown, much paler than the adult female, the feathers of the upper surface margined with sandy-buff; the lower surface dull chestnut everywhere, mottled with blackish sub-terminal bars to the feathers; head brown; feathers round the eye whitish, with dusky streaks; sides of face and throat dull buff, with dusky streaks and bars; speculum as in the female, but black, with scarcely any gloss; "bill dark blue; feet and toes slaty-olive; iris dark hazel" (*E. W. Nelson*).

Characters.—Besides the generic characters given above, Steller's Eider may be easily recognised by its peculiar and striking coloration. The purple speculum present in both sexes, bordered above and below by a white band in the female, and the white head of the male with the green patch on the lores, and the green patch on the nape, serve to distinguish the species. The female is very dark in colour, and shows chestnut mottlings on the upper back and again on the chest, the breast and abdomen being black.

Range in Great Britain.—Has only occurred twice within British limits, one having been shot near Caistor in Norfolk in February, 1830, while a second immature specimen was procured off Filey Brigg in Yorkshire on the 15th of August, 1845.

Range outside the British Islands.—Steller's Eider Duck breeds plentifully along the arctic coast of Siberia east of the Taimyr Peninsula, and is abundant in the Aleutian Islands. It has also been found breeding on the Varanger Fjord in the north of Norway and in Russian Finland. In winter it is not uncommon in the Baltic Sea, and has been obtained in Heligoland, Denmark, and off the coasts of Northern France. The coasts and islands of Bering Sea, writes Mr. Nelson, "may be given as the eastern range of this fine Duck. Westward of these points it breeds in tens of thousands along the north coast of Siberia." It also inhabits the Aleutian and Kurile Islands in winter, frequenting the bays which are not icebound, as well as the shores of Alaska, but the species has not as yet been found breeding in the latter country.

Habits.—Steller's Eider is a marine Duck, and feeds chiefly on molluscs. It is said to be very shy, especially during the breeding-season, and deserts its nest, if the latter be meddled with. The note is said to be something like that of a Teal.

Nest.—Cup-shaped, according to Von Middendorf, and lined with down, and placed on moss on the flat tundra. Dall found one in Unalaska, built between two tussocks of grass, and the depression carefully lined with the same material. It contained only one egg, and had not been lined with down; it was most carefully concealed by overhanging grasses.

Eggs.—Seven to nine in number, of a pale greenish stone-colour. Axis, 2·2 inches; diam., 1·55.

Down.—Very dull chocolate-brown, with a small white "eye" in the centre, the filamentous tips being also brown.

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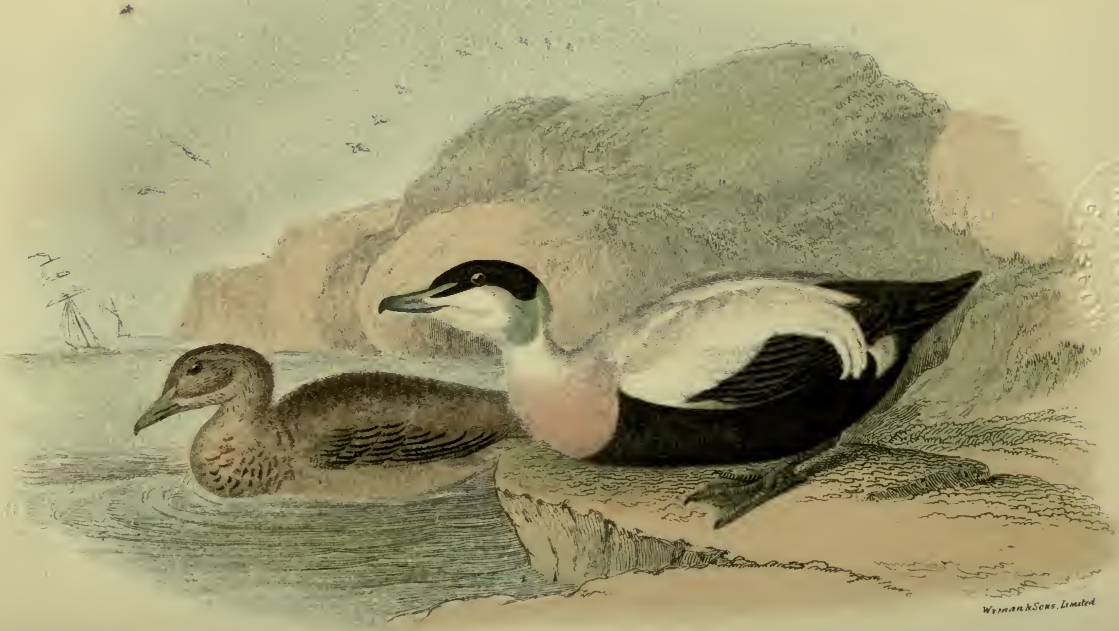
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EIDER DUCK.

THE TRUE EIDER DUCKS. GENUS SOMATERIA.

Somateria, Leach, in Ross's Voy. Disc. App. p. xlviii. (1819).

Type, *S. mollissima* (Linn).

In this genus the edges of the upper mandible are not bent inwardly; the lores are separated from the feathers of the forehead by a bare space; the bill is rather narrow and pointed, and the inner secondaries are slightly falcate, or sickle-shaped. (Cf. Salvad. Cat. B. Brit. Mus. xxvii. p. 327).

There are four species of True Eiders, of which *Somateria dresseri* is North American; *S.* v.-*nigrum* inhabits North-western America and North-eastern Asia; *S. spectabilis*, North-eastern Europe and North America, occasionally visiting the British Islands, in parts of which the Common Eider is a resident.

I. THE COMMON EIDER DUCK. SOMATERIA MOLLISSIMA.

Anas mollissima, Linn. S. N. i. p. 198 (1766).

Somateria mollissima, Macg. Br. B. v. p. 147 (1852); Dresser, B. Eur. vi. p. 629, pl. 445 (1871); B. O. U. List Br. B. p. 134 (1883); Saunders, ed. Yarr. Br. B. iv. p. 457 (1885); Seebohm, Br. B. iii. p. 616 (1885); Saunders, Man. Br. B. p. 447 (1889); Lilford, Col. Fig. Br. B. part xxii. (1892); Salvad. Cat. B. Brit. Mus. xxvii. p. 425 (1895).

(*Plate LXII.*)

Adult Male.—General colour above pure white, including the wing-coverts and scapulars and innermost secondaries, which are sickle-shaped; centre of the rump and upper tail-coverts black; tail blackish; bastard-wing, primary and greater coverts, and quills black, the latter with paler shafts; the inner secondaries with a good deal of white on the inner web, where they adjoin the sickle-shaped feathers; crown of head velvety purplish-black, this black extending below the eye and above the lores along the bare portion of the mandible; the hinder crown divided by a broad streak of white, tinged with green; the nape and sides of the hind head behind the ear-coverts green, with a white patch in the centre of the latter portion; entire sides of face and throat white, joining the white of the hind-neck and mantle; fore-neck and chest delicate pink, the lower feathers fringed with black at the ends, where they adjoin the breast, which, with the rest of the under surface of the body, is black; under wing-coverts and axillaries white; quill-lining grey; bill dull olive-green, almost olive-yellow in old birds; nail brownish-white; feet light olive-green, the claws brownish-black; iris brown. Total length, 23 inches; culmen, 2·1; wing, 11·0; tail, 3·6; tarsus, 2·0.

Adult Female.—Brown above, mottled with blackish centres to the feathers and with rufous bars, the feathers being edged with this colour; the head and neck everywhere thickly streaked with blackish; wing-coverts brown, the greater series tipped with ashy-whitish, forming a wing-bar; quills brown, the secondaries ashy-whitish externally, with a dark brown base, forming a second wing-bar; under surface of body lighter brown, with fulvescent cross-bars, the chest slightly more rufescent, and barred with black, the flanks more broadly banded with rufous and black; under wing-coverts brown, a few of the centre ones white; bill and feet as in the male.

Young Males.—Brown like the females, but much darker and more uniform, with the light margins to the feathers very indistinct; the greater coverts and secondaries narrowly tipped with white, forming two obsolete wing-bars; the sides of the head blackish in the males and brown in the females; throat ashy-brown; remainder of under surface of body pale brown, with numerous whitish cross-lines, which are brought into relief by dusky sub-terminal bars.

In the breeding-season the males assume a hen-like plumage, which, according to Count Salvadori, is like that of the young male, but generally shows some white and black feathers remaining.

Nestling.—Dark brown above, pale brown below, with a broad streak over each eye.

Range in Great Britain.—The breeding-range of the Common Eider Duck lies to the north of the British Islands, from the Farne Islands and the coast of Northumberland north to the Orkneys and Shetland Isles. It is also on the increase in the western islands of Scotland, but is unknown as a breeding-bird in Ireland, where, indeed, it is only a rare visitor. In the winter it is met with off the coast of England.

Range outside the British Islands.—The Eider Duck, on account of its usefulness in providing the material for quilts, is, in the northern countries of Europe, under the special protection of the law, and it is found nesting on the islands off the coast of Norway and Denmark, as well as in the Færoes and Iceland. To the northward it occurs in Spitsbergen and Franz Josef Land, and extends eastward to the Kara Sea and westward to the Coppermine River. In America the Common Eider is considered to be represented by a distinct race, which Mr. Ridgway distinguishes as *S. mollissima borealis;* it is said by him to be an inhabitant of Eastern North America, including Greenland, ranging south to Northern Labrador in summer and to the northern border of the United States in winter. Count Salvadori, however, cannot detect any material difference in the Greenland Eider, as it is called, and I at present agree with him, from a study of the specimens in the British Museum. Mr. Ridgway, however, states that North American specimens have the bill orange-yellowish in life, instead of dull greyish. If this coloration proves to be constant, Mr. Ridgway will have proved his point, and the American Eider will have to be separated as *S. borealis.*

Habits.—The Common Eider Duck is practically a resident species in the places which it frequents, and occurs only accidentally away from them, when driven by stress of weather. The females are entrusted with the care of the young, the males taking themselves off, and associating in large flocks on the sea.

Mr. Seebohm, who has studied the habits of the species on the Farne Islands, writes:—"No bird is more maritime in its habits than the Eider. It rarely, if ever, leaves the sea, and seldom flies over the land, always preferring to follow the coast-line rather than cross even a narrow headland. . . . It loves to frequent precipitous islands and small uninhabited sea-girt rocks, breeding on them, and obtaining its food in the surrounding sea. It is more or less gregarious at all times, but collects into much larger flocks in winter than in summer. Sometimes it is met with at a considerable distance from land, and when undergoing its annual change of feathers it usually keeps well out at sea, as if fully aware of its helplessness and danger. It is a day-feeder, and appears to spend the night on the land. . . . It lives almost exclusively on small crustaceans, marine insects, and shell-fish, and crabs, often of considerable size, are swallowed whole. . . . The note of the Eider is a harsh grating *kr-kr-kr;* but when courting his mate the male utters a harsh loud cooing sound, like *ah-oo*, as he swims round and round her, and repeatedly moves his head up and down."

Nest.—Sometimes only a depression in the ground, thickly lined with the bird's own down. At the Farnes, says Mr. Seebohm, "most of the Eider Ducks make their nests among the bladder-campion, which grows in great profusion on some of the islands, but some of the birds seek nesting-sites in the clefts of the rocks close to the water. . . . . Where the bird is common, especially where it is protected for commercial purposes, great numbers of nests are placed almost side by side, and in some cases two females share the same abode, sitting amicably on their eggs. The nest of the Eider is a substantial structure made of dry grass, heather, bits of seaweed, and stalks of campion and other marine herbage. The lining of down is gradually added when the full complement of eggs is almost completed."

Mr. Robert Read writes to me:—"The Duck will sometimes sit so closely on its nest that it can be touched by hand, but when suddenly disturbed from the nest, it usually discharges over the eggs a most offensive-smelling liquid excrement. This is almost enough to prevent any human being from touching the eggs; and one can imagine that it must be of great protective value in acting as a strong deterrent to stoats, hoodies, and other vermin from sucking the eggs. Although this habit is not peculiar to the Eider, one probably notices it most in this species of Duck, because the other species are not so easily approached, but leave the nest earlier, and so have time to cover up their eggs with down, and protect them in that way."

Eggs.—From five to eight in number, of a greenish stone-colour. Axis, 2·9–3·25 inches; diam., 1·9–2·1.

Down.—Not so dark as in some of the other diving Ducks, of a light brown colour, with the filamentous tips scarcely any paler, the "eye" of white in the centre dull and indistinct.

II. THE KING EIDER. SOMATERIA SPECTABILIS.

Anas spectabilis, Linn. Syst. Nat. i. p. 195 (1766).

Somateria spectabilis, Macg. Brit. B. v. p. 158 (1852); Dresser, B. Eur. vii. p. 643, pl. 446 (1877); B. O. U. List Br. B. p. 134 (1883); Saunders, ed. Yarr. Br. B. iv. p. 463 (1885); Seebohm, Brit. B. iii. p. 621 (1885); Saunders, Man. Brit. B. p. 449 (1889); Lilford, Col. Fig. Brit. B. part xxx. (1895); Salvad. Cat. B. Brit. Mus. xxvii. p. 432 (1895).

Adult Male.—General colour above black, the scapulars and wing-coverts with a patch of white in the middle of the lesser and median series, the greater coverts with a small white spot at the end; bastard-wing, primary-coverts, and quills black, the secondaries tipped with white, the innermost sickle-shaped; on each side of the rump a large patch of white; upper tail-coverts and tail black; crown of head and nape and sides of the hinder head delicate lavender-grey; the hind-neck and upper mantle pure white; at the base of the bill a velvety-black spot, continued round the bare loral space and reaching nearly to the eye, and descending nearly to the base of the mandible; sides of face delicate green, separated from the lavender-grey of the sides of the neck by a narrow band of white, margined by a few black lines; fore-part of lores and cheeks whiter; throat white, with a V-shaped mark of black; fore-neck creamy-buff; rest of under surface from the chest downwards black; under wing-coverts and axillaries white, with the coverts round the edge of the wing dusky-brown, with whitish spots at the ends; quill-lining ashy; bill with the base of the upper mandible spread out into a shield on each side, reddish-orange; feet orange-red, the membrane darker; iris yellow. Total length, 24 inches; culmen, 1·4; wing, 10·7; tail, 2·8; tarsus, 1·8.

Adult Female.—Rufous, mottled with black centres to the feathers; the head and neck streaked with blackish; wing-coverts blackish, with rufous edgings to the lesser and median series, the inner greater coverts with white tips, forming a small band; the innermost secondaries slightly sickle-shaped, blackish edged with rufous; quills black, a few of the secondaries fringed with white at the ends; tail brown; throat rufous, like the sides of the face; fore-neck, chest, and sides of body more chestnut, with concentric black bars; centre of breast and abdomen sooty-blackish, the under tail-coverts more rufous; under wing-coverts dusky, with a patch of white in the centre; bill greenish-brown; feet dull ochre; iris dull yellow. Total length, 21 inches; wing, 10·5.

Characters.—The King Eider can always be distinguished by the way in which the anterior point of the feathering on the forehead reaches as far as the hinder end of the nostrils; the throat has a V-shaped mark. In the males the base of the upper mandible is enlarged on each side so as to form a broad naked lobe. The female is much more rufous than that of the Common Eider, and can be distinguished by the characters of the feathering on the bill.

Range in Great Britain.—The King Eider can only be considered a rare visitor to our coasts, and has principally been noticed off the Farne Islands, doubtless lured to stay there by the presence of the Common Eider Ducks, which are resident on the group. Several have been observed off the coast of Scotland, particularly in the Orkneys and Shetland Isles, and in England a few individuals have been procured, chiefly on the east coast. I have seen one specimen from Ireland, an immature bird having been submitted to me by Mr. Sheridan, who shot it near Achill Island, and two other Irish specimens have been recorded.

Range outside the British Islands.—The King Eider is a strictly arctic bird, breeding in Kolguev, Novaya Zemlya, and in the northern lands of Siberia to Bering Sea. It is not yet known to breed in Iceland or the Færoes, or in Spitsbergen or Scandinavia, though it occasionally occurs in winter in these localities, and has also been found at intervals on the coasts of the North Sea and the Baltic. In North America it is known as a breeding bird, not only in Greenland, but nearly as far north as man has yet penetrated, and as far south as the Province of Quebec in Canada, coming further in winter to the Great Lakes and New Jersey, and being found occasionally as far south as California.

Habits.—Colonel Feilden, in his notes on the birds of the North Polar basin, says that King Eiders were first noticed on the 24th of June, and that they bred in small numbers on Cape Union. In Alaska, Mr. Nelson says, it is very seldom found on the mainland, and generally on the sea, but on the Siberian side of Bering Straits it is more common, and associates in immense flocks with Steller's Eider Duck. In its general habits the present species resembles the Common Eider.

Nest.—Resembles that of the Common Eider Duck, but is generally less compact, and often consists of a mere depression in the ground, the lining being composed of the bird's own down.

Eggs.—Generally six in number, of a greenish stone-colour or clay-brown. Axis, 2·55–2·8 inches; diam., 1·75–1·9.

THE SCOTERS. GENUS ŒDEMIA.

Oidemia, Fleming, Phil. Zool. ii. p. 260 (1822).

The Scoters belong to the same section of the Diving Ducks as the Long-tailed Duck and the Harlequin, but are chiefly distinguished by their black plumage, which is quite peculiar to them, the females being also greyish-brown without any barring, as is seen in most of the *Anatidæ*. They are entirely marine in their habits, and are of sombre plumage.

Six species of Scoters are recognised by Count Salvadori, all of them arctic birds in the breeding-season, going south in winter. They are inhabitants of the northern parts of both hemispheres.

I. THE COMMON SCOTER. ŒDEMIA NIGRA.

Anas nigra, Linn. S. N. i. p. 196 (1766).

Oidemia nigra, Macg. Br. B. v. p. 140 (1852).

Œdemia nigra, Dresser, B. Eur. vi. p. 663, pl. 449 (1877); B. O. U. List Br. B. p. 135 (1883); Saunders, ed. Yarr. Br. B. iv. p. 472 (1885); id. Man. Br. B. p. 453 (1889); Lilford, Col. Fig. Br. B. part xii. (1892); Salvad. Cat. B. Brit. Mus. xxvii. p. 401 (1895).

Fuligula nigra, Seebohm, Br. B. iii. p. 602 (1885).

Adult Male.—Black all over, the head glossed with dark purple and the back with greenish; under surface of body somewhat duller black, and having a slight shade of brown; bill black, with a swollen knob near the base, the region round the nostrils yellow; feet brownish-black, the webs darker; iris dark brown. Total length, 20 inches; culmen, 1·8; wing, 9·0; tail, 3·5; tarsus, 1·6.

Adult Female.—Duller in colour than the male, dark brown, with light edges to the feathers of the under-parts, which are paler; bill dull black, with only a slight swelling near the base, but no distinct bulb; the sides of the face and throat paler, dull white, with obscure tips of dull brown to the feathers. Total length, 18 inches; culmen, 1·7; wing, 7·6; tail, 2·65; tarsus, 1·65.

Young Birds.—Resemble the old female, but are more uniform in colour above, and have the breast and abdomen white. Young males are at first brown like the old female, and pass their first winter in the brown plumage, moulting into a black dress in the following spring.

Nestling.—Uniform dark brown above; throat white; breast brown; abdomen greyish-brown; bill blackish lead-colour; feet olivaceous.

Characters.—The male Common Scoter is distinguished by its entirely black colour, by the yellow patch on its bill, and by the swollen knob on the latter. The female has the chin and throat whitish, but has no white on the wing-speculum or on the nape.

Range in Great Britain.—A common winter visitor to our coasts in autumn and winter, when it is found in thousands. A few may be seen in summer, and the species is said to have bred in Earnsley Marshes, near Chichester, of recent years. Mr. Chas. Fowler shot a drake in August, 1891, which was accompanied by seven nestlings just able to fly, and the specimen in question was exhibited by Mr. Howard Saunders at a meeting of the British Ornithologists' Club on the 18th of January, 1893. This is the only probable instance of the breeding of the Scoter in England, but it nests regularly in the north of Scotland, in Caithness, Sutherland, and north-west Ross-shire.

Range outside the British Islands.—The Common Scoter nests in the Northern Palæarctic Region from Iceland to Scandinavia, Northern Russia and Siberia as far as the Taimyr Peninsula.

In winter it extends on the west along the shores of the Atlantic, reaching to the Azores and for some little distance into the Mediterranean, occurring very rarely on the coasts of Provence and Italy. In the Eastern Mediterranean, however, it has been observed off the coast of Palestine, but the birds which winter here probably form part of the migration which populates the Caspian Sea in winter. In America our Common Scoter is replaced by the American Scoter (*Œ. americana*), which is easily distinguished by having the basal half of the upper mandible, including the knob, of a light yellow, with a scarlet-vermilion tinge on the sides.

Habits.—Although sometimes occurring inland, the Scoter is essentially a marine Duck, and it is seen in immense flocks in winter off our eastern coasts, as well as in the north of Ireland, keeping at a safe distance out to sea, unless driven into the bays by stress of weather. Thousands may often be seen on a crossing to Holland or Belgium, off the mouths of the Maas or the Scheldt. The Scoter is a very powerful swimmer and diver, and I remember an expedition which I made in November, 1893, with my friends F. J. Jackson and Frank Stone, after the Scoters in Holkham Bay in Norfolk. There were several boats engaged in sailing round the flocks, while we had decoys out in every direction, whose wooden heads bobbed up and down in the water with a most lifelike motion, but the result of the bag was very small. Although we managed to break up the flocks somewhat, the birds became very wild, and swam and dived out to sea quicker than the boats could sail.

Mr. Seebohm believes that numbers of the Scoters which go north in summer do not breed, as he found large flocks frequenting the mouth of the Petchora, on the banks of which river other individuals were busily engaged with the duties of incubation. He writes:—"In the valley of the Petchora flocks of Black Scoters were seen flying north down the river long after other Ducks had eggs. In the middle of July we were lying at anchor in the lagoon of the river, waiting for the disappearance of the fog which had come down from the arctic ice and concealed the Golievsky Islands which divide the lagoon from the ocean. The sun was shining brilliantly overhead, and when the fog lifted the island was revealed close to us with a flock of ten thousand Black Ducks circling in a cloud over it. It seems scarcely possible that these were all males whose mates were scattered on the nests over the tundra. More probably they were the accumulation of the late flocks that we had seen migrating down the river, and which most likely consisted of the previous year's birds not yet adult enough to breed. They appear to arrive at their summer quarters very late, and to leave again very early, probably before the autumn moult takes place. If this be so, it will explain the statement of Naumann that the adult males arrive in the Baltic in August, but the young not until two months later; and also that of Mr. Cecil Smith, who found them on the Devonshire coast moulting their quills and unable to fly in the middle of September. . . . The usual note of the Common Scoter is a grating *kr-kr-kr* like that of the Tufted Duck, but in early spring the drake calls to the duck in a double note which is not unmusical. It is a bird of very rapid flight, especially on migration, but on the ground it walks clumsily. It swims with perfect ease, and obtains most of its food by diving. The food consists of molluscs and aquatic insects, varied with the seeds of water-plants and other vegetable substances."

Nest.—A hollow scooped in the ground, with a few twigs, dead leaves, and dry grass, but plentifully lined with down.

Eggs.—Eight or nine in number, of a light creamy stone-colour, smooth, and with a slight gloss. Axis, 2·4–2·7 inches; diam., 1·7–1·85.

Down.—Chocolate-brown, with a decidedly large "eye" of white; the filamentous tips to the down lighter and more ashy-brown.

II. THE VELVET SCOTER. ŒDEMIA FUSCA.

Anas fusca, Linn. S. N. i. p. 196 (1766).
Oidemia fusca, Macg. Br. B. v. p. 134 (1852).
Œdemia fusca, Dresser, B. Eur. vi. p. 657, pl. 448 (1877); B. O. U. List Br. B. p. 135 (1883); Saunders, ed. Yarr. Br. B. iv. p. 476 (1885); id. Man. Br. B. p. 455 (1889); Lilford, Col. Fig. Br. B. part xxii. (1892); Salvad. Cat. B. Brit. Mus. xxvii. p. 406 (1895).
Fuligula fusca, Seebohm, Br. B. iii. p. 605 (1885).

Adult Male.—Velvety-black all over, with a white alar speculum formed by the tips of the greater coverts being white, as well as the secondary-quills; eyelids and a small spot under the eye white; bill pale orange or apricot-yellow, the base and edges black, with a diagonal line of black running from each nostril to the nail of the bill; feet and toes dull crimson-red or orange-red, the webs black; iris chalky-white. Total length, 22 inches; culmen, 1·7; wing, 10·4; tail, 2·7; tarsus, 1·8.

There is some discrepancy between the descriptions of the soft parts of this Duck. I have given them as described by Count Salvadori and Mr. Howard Saunders.

Adult Female.—Brown, instead of black, with greyish margins to the feathers of the upper surface; wing-coverts like the back, the greater series not tipped with white; a white wing-speculum formed by the white secondaries, the outer ones of which are edged with black at the ends; a slightly indicated white patch on the lores and ear-coverts; under surface of body brown, with a little whitish on the breast; bill brown; feet paler than in the male; iris brown. Total length, 21 inches; wing, 10·2.

Young Birds.—At first resemble the adult female. The young males in their first spring plumage resemble the adults, but are not so glossy.

Nestling.—May be distinguished from the nestling of the Common Scoter by being whiter underneath and by having a white spot on the wings.

Characters.—Besides the white alar speculum, the length of the commissure or gape of the bill is much more than the length of the inner toe, without its claw. Count Salvadori also points out that the feathers of the head advance farther forward on the lores than they do on the forehead. On account of these differences the Velvet Scoter is sometimes generically separated from the others as *Melanonetta fusca.*

Range in Great Britain.—A winter visitant, along with the Common Scoter, being more abundant on our eastern coasts than on the west, and the same is the case with Scotland and Ireland. A male bird has been recorded by Mr. Bolam as having frequented the vicinity of Berwick-on-Tweed all the summer of 1879, until the middle of September, and Mr. Booth believed that a few pairs bred in the northern parts of the Highlands of Scotland, but this still requires confirmation.

Range outside the British Islands.—An inhabitant of Scandinavia during the breeding-season, and it is said by Naumann to nest as far south as Mecklenburg. Its breeding-range probably extends throughout Siberia to the Pacific, and on its southern migrations it has been known to occur off the coast of Northern Spain, and it visits the Adriatic, the Black and Caspian Seas, as well as Turkestan, while in the far east it wanders to the Yangtze River in winter. In America it is replaced by an allied species, *Œ. deglandi*, which has the swollen base at the sides of the upper mandible entirely feathered, and the loral feathers are separated from the nostril by a space about equal to the length of the nostril itself.

Habits.—During the nesting-season the Velvet Scoter ascends rivers and also breeds on inland lakes, nesting, according to Mr. Seebohm, on the tundra at some distance from water; in winter it frequents the sea-coasts. Its habits are somewhat less shy than those of the Common Scoter, and its food consists principally of molluscs, which it procures by diving. Its note is, like that of other diving Ducks, a harsh *ker-ker*.

Nest.—According to Mr. Seebohm, a mere depression in the ground, lined with any suitable material that may be handy, and with a plentiful supply of down.

Eggs.—Eight or nine in number, laid at the end of June or the beginning of July; their colour is creamy stone-colour or buff. Axis, 2·65–3·0 inches; diam., 1·85–1·95.

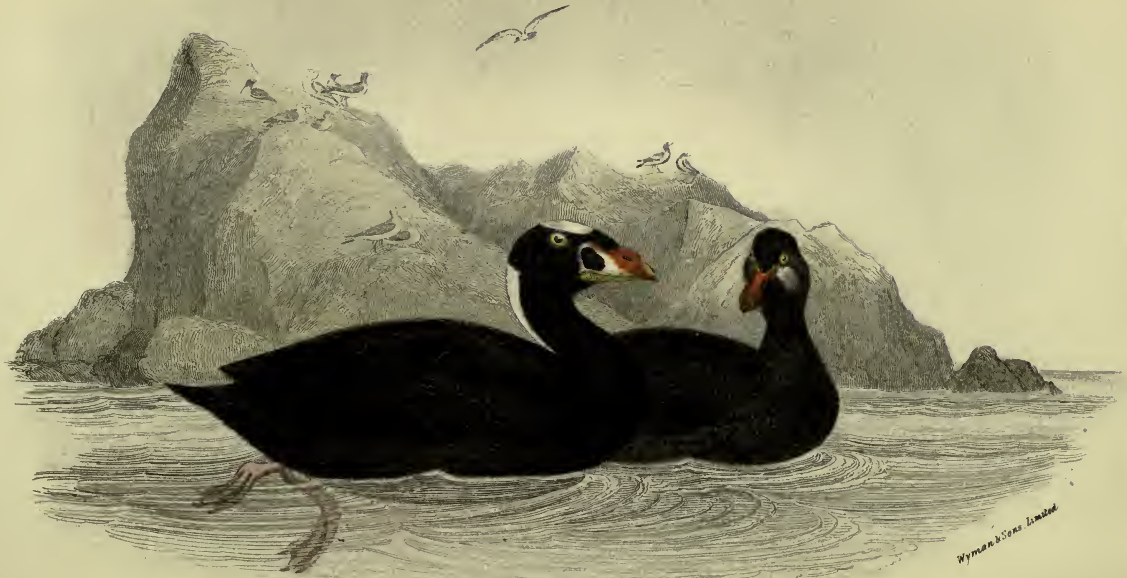
Down.—Moderately dark, brown with greyish-brown filamentous tips, the white eye-spot very small and indistinct.

III. THE SURF SCOTER. ŒDEMIA PERSPICILLATA.

Anas perspicillata, Linn. S. N. i. p. 201 (1766).
Oidemia perspicillata, Macg. Br. B. v. p. 129 (1852).
Œdemia perspicillata, Dresser, B. Eur. vi. p. 669, pl. 450 (1877); B. O. U. List Br. B. p. 136 (1883); Saunders, ed. Yarr. Br. B. iv. p. 481 (1885); id. Man. Br. B. p. 457, (1889); Salvad. Cat. B. Brit. Mus. xxvii. p. 412 (1895).

PLATE LXIII.

BAILLIE'S INSTITUTION GLASGOW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SURF SCOTER.

Fuligula perspicillata, Seebohm, Br. B. iii. p. 607 (1885).

(*Plate LXIII.*)

Adult Male.—Larger than *Œ. fusca* or *Œ. nigra;* velvety-black, with a large, nearly quadrangular patch of white on the crown, and another triangular white patch on the nape; bill reddish in life, the base swollen and marked on each side with a large black spot; feet crimson externally, the inner side of the tarsus with both sides of the inner toe orange-chrome, deepening in parts to orange-vermilion; web black, the joints with blotches of black; iris white. Total length, 21 inches; culmen, 1·55; wing, 9·3; tail, 3·1; tarsus, 1·6.

Count Salvadori states that in some birds, apparently quite adult, the white patch on the crown is absent. A careful description of the colour of the bill and feet is given by Mr. Trumbull in the "Auk," Vol. ix. pp. 153-160.

Adult Female.—Brown above and below, whiter in the centre of the breast and abdomen; feathers of the back with indistinct ashy-brown edges; crown of head and nape blackish, as also the lores and sides of face, with a slight indication of a whitish patch below the eye, and another, more distinct, above the ear-coverts. Total length, 18 inches; wing, 8·4.

Young Birds.—At first resemble the old female, but the head has two distinct white patches, one near the lateral base of the bill, and the other over the ear-coverts, behind and below the eye; the crown decidedly blackish; the upper plumage also, according to Count Salvadori, is more uniform than in the adult female. Young males in their first full plumage are also like the latter, but have traces of white on the nape. Young females have the breast and abdomen white during the first autumn. Young males in putting on their black plumage soon develop the white nape-spot, but the white patch on the crown comes later.

Characters.—In the Surf Scoter there is no white speculum in the wing, the feathers of the head advance much farther on the forehead than they do on the lores, and the swollen portion on the sides of the bill at the base is entirely naked (Salvadori). The Surf Scoter, on account of these characters, is sometimes placed in a distinct genus, *Pelionetta*.

Range in Great Britain.—The present species is an inhabitant of North America, but has occurred many times in our seas, principally on the western coasts in winter, the most frequent locality for the species being the Orkney Islands.

Range outside the British Islands.—The Surf Scoter is an occasional visitor to the shores of Western Europe, besides the British Islands, having been obtained off Northern France, as well as the coast of Swedish Lapland, and near Öland in the Baltic, as well as in Heligoland waters. In North America it breeds throughout the high north, from 70° down to about 50° N. lat., visiting the Great Lakes in winter, and extends to Lower California in the west, and to the Bermudas and to Jamaica in its eastern winter range. It is recorded only as a straggler in Greenland.

Habits.—Like the Velvet Scoter, the present species follows many land routes in arriving at its winter quarters, but it also frequents the sea-coasts, where it associates with other kinds of Ducks, such as Long-tailed Ducks, and the other species of Scoter. During the breeding-season the males assemble in flocks, and separate from the females, and leave to the latter the task of rearing the young. Mr. E. W. Nelson says that in Alaska, "during the mating-season, they have a low clear whistle for a call-note, and may readily be decoyed within gun-shot by imitating it from a 'blind.' They are very curious also at this time, and I have seen a flock rise and come up within a few yards of me as I was trying to creep up within gun-shot of them." He also gives the following interesting note:—"On the 23rd of August, 1878, I visited Stewart Island, about ten miles to the seaward of St. Michael's. As I neared this island in my kyak, I found the water literally black with the males of this species, which were united in an enormous flock, forming a continuous band around the outer end of the island for a distance of about ten miles in length, and from one half to three-fourths of a mile in width. As the boat approached them, those nearest began to rise heavily by aid of wings and feet from the glassy surface of the gently undulating but calm water. The first to rise communicated the alarm to those beyond, until, as far as could be seen, the water was covered with flapping wings, and the air filled with a roar like that of a cataract. The rapid vibrations produced in the air by tens of thousands of wings could be plainly felt."

Nest.—Placed in a depression of the ground, or in a tuft of grass; made of weeds, or moss, twigs, and water-plants.

Eggs.—From five to eight in number. They resemble those of the Black Scoter and the Velvet Scoter, but are smaller. Slightly greenish cream-colour. Axis, 2·4 inches; diam., 1·6.

THE MERGANSERS. SUB-FAMILY MERGINÆ.

The members of this Sub-family constitute a small, but very natural group of the Diving Ducks. They have the hind-toe with a very broad lobe, as is usual in this group of the Family *Anatidæ.* They have only an ordinary tail, not the stiffened tail of their natural allies, the American Torrent-Ducks (*Merganetta*), nor the Old World *Erismaturæ*, but the bill is remarkable, as the lower mandible shows no trace of lamellæ; but it has a series of serrations, like teeth, on its upper edge, and these are also found along the edge of the upper mandible. These look like teeth, but they are not real teeth, as in the case of ancient birds like *Archæopteryx* and *Hesperornis.* This is easily proved by an examination of the skull, for, the sheath of the bill being removed, it is seen that the margins of both mandibles are perfectly smooth, and bear no trace of serrations or teeth.

THE SMEWS. GENUS MERGUS.

Mergus, Linn. Syst. Nat. i. p. 207 (1766).
Type, *M. albellus*, Linn.

The Smews are represented by a single species, which becomes, of course, its type. It is easily recognised from the other Mergansers by its short bill, the culmen, or ridge, of which is shorter than the tarsus of the bird.

Mergus is a Palæarctic genus, the Smew breeding in the high north, and wandering south in winter.

I. THE SMEW. MERGUS ALBELLUS.

Mergus albellus, Linn. Syst. Nat. i. p. 209 (1766); Macg. Br. B. v. p. 233 (1852); Dresser, B. Eur. vi. p. 699, pls. 454, 455 (1874); B. O. U. List Br. B. p. 137 (1883); Saunders, ed. Yarr. Br. B. iv. p. 449 (1885); Seebohm, Br. B. iii. p. 636 (1885); Saunders, Man. Br. B. p. 463 (1889); Lilford, Col. Fig. Br. B. part xiv. (1891); Salvad. Cat. B. Brit. Mus. xxvii. p. 464 (1895).

Adult Male.—General colour black and white; the black parts on the upper surface being the following—a patch embracing the lores and fore-part of cheeks, and extending to behind the eye, a black crescentic mark round the nape, the centre of the back, and mantle, to which extend two narrow lines of black, one on the sides of the fore-neck and another on the sides of the upper breast; rump and upper tail-coverts grey, with hoary margins; scapulars white, with a black border to the outer ones, forming a line on each side of the back; wing-coverts white, the inner ones and those round the bend of the wing black; the greater coverts black, with white tips, forming a wing-band; quills black, the secondaries tipped with white, the inner ones grey and slightly narrowed, the outer ones more or less white; tail-feathers grey, with hoary tips; entire under surface of body white, the flank-feathers more ashy, lanceolate, and having wavy bars of ashy-brown; under wing-coverts dusky-blackish, the central ones and the axillaries white; bill bluish lead-colour, the nail lighter; feet bright bluish lead-colour, the webs darker; iris bluish-white. Total length, 17 inches; culmen, 1·2; wing, 7·6; tail, 2·9; tarsus, 1·25.

Adult Female.—Differs from the male in being grey above, with paler ashy margins to the feathers; the lower back, rump, and upper tail-coverts darker and somewhat blackish; wing-coverts grey, with a patch of white in the middle, the wings otherwise as in the male; crown of head and nape dull rufous, as also the lores and sides of face; entire under surface of body white, with an ashy shade on the lower throat and fore-neck, the sides of the body also ashy-brown. Total length, 16 inches; culmen, 1·1; wing, 6·8; tail, 2·65; tarsus, 1·1.

Young Males.—At first resemble the old female, but have the lores and sides of face rufous, like the head. These are the first parts to get black, and the white markings on the upper surface are assumed in their first spring, though a male bird killed by Consul Swinhoe near Shanghai in February is still in the female plumage, but has an entirely black loral patch.

Nestlings.—These are described by Count Salvadori as being dark brown, with a very small white spot below the eye. There are also white spots on the posterior edge of the wing, on the sides of the back, just near the joint of the wing, the sides of the rump, and on the flanks. The under surface of the body is white, the throat and upper part of the neck conspicuously so; the crop dusky.

Range in Great Britain.—It is rare to find a fully adult male Smew in collections of British-killed birds, as the old birds are seldom killed, but young ones are not unfrequently captured. The species is a winter visitor only, rarer on our western coasts, but occurring with more or less frequency in all three kingdoms.

Range outside the British Islands.—The Smew is a thoroughly Palæarctic species, and breeds in the high north from Finnish Lapland across Northern Russia and Siberia. In winter it visits Great Britain and the Atlantic coasts of Western Europe, and migrates south by the great river-routes till it reaches the Mediterranean, North-western India, and it extends at this season of the year to Japan and China. Its reported occurrence in Eastern North America requires confirmation, and it is not known from the Færoes, Iceland, or Greenland.

Habits.—The first recorded instance of the finding of the eggs of the Smew is to the credit of our enterprising countryman, the late John Wolley, the discoverer of the eggs of so many rare European birds. They were procured by him in Finnish Lapland.

Years afterwards the celebrated expedition to the Petchora by Messrs. Seebohm and Harvie-Brown made us better acquainted with the nesting-habits of the bird. Mr. Seebohm observes:—"A few miles to the south of the Arctic Circle, in the valley of the Petchora, lies the small town of Haberiki, containing about a dozen houses. The timber for about a mile round has been cleared, but beyond the country consists of alternate lake, swamp, and forest. Grand old pines and larches, with stems three or four feet in diameter, conceal charming little alder- and willow-fringed pools, and fallen trunks, covered with moss and lichen, provide excellent cover for watching the Ducks swimming fearlessly in these little paradises. The Smew is the greatest ornament of these picturesque little spots, but is not quite so common as Teal, Wigeon, and Pin-tail. We did not succeed in taking the nest of the Smew, but having commissioned some of the villagers to bring us eggs and down of Ducks, we were delighted to receive a clutch of what looked like Wigeon's eggs with pale grey down. The man who brought it knew the bird well, and told us that he had taken the eggs from a hollow tree."

Describing the habits of the Smew in winter, Mr. Hume writes:—"They are eminently gregarious, and are always to be seen in flocks of from seven to forty, and rarely in smaller or larger parties than from about a dozen to about twenty. Large rivers like the Indus (I have never seen them on the Jumna or Ganges), or large lakes covering twenty square miles and upwards of country, are what they chiefly affect; and on these, even though shot at repeatedly, they will remain for months. I have, however, in unfrequented localities, occasionally seen them on ordinary good-sized jhils, covering, perhaps, barely a single square mile, but these they desert directly they are at all worried.

"They swim and dive splendidly, and if only a single boat is after them they will constantly stick to the water even after being fired at, rising perhaps at the moment, but dropping within fifty yards, and instantly diving to re-appear from fifty to a hundred yards beyond the place at which they vanished. They come up scattered, but all swim converging on one point, and in a few minutes they are swimming away in a close lump, just as before you fired. But if two or three boats hem them in they generally rise, and if the place is small, disappear—if large, circle round and light again a couple of miles off. They spring out of the water with ease, and fly with great rapidity, quite as quickly and easily as the Common Teal, but almost silently, and with less of a perceptible wing-rustle than any species I know. This is probably due to their very narrow, pointed, somewhat curved wings, by which they can be instantly recognised when flying. They are very active, restless birds, almost always swimming and diving. I have never seen one on land, but I once saw a number asleep on the water about mid-day in March.

"They feed entirely under water. I have examined many without ever finding any vegetable matter in their gizzards, or anything but small fish and water-insects, chiefly a kind of cricket (?), and these they pursue under water with great rapidity, as may be guessed by watching in clear water a hard-pressed, slightly-winged bird: when turning, it dives under the boat. No Duck can touch them at diving; even Grebes and Cormorants, and I have watched both perform the same manœuvre, are scarcely so rapid in their movements under water. They use their wings in diving, though they do not spread them fully, so that you must not judge of their performance by birds with wings injured above the carpal joint, but where the injury is merely on the carpus, sufficient to prevent flight, but not otherwise serious, their diving is a thing to watch."

Nest.—Placed in a hollow tree.

Eggs.—Seven or eight in number, and scarcely to be told from those of the Wigeon. Mr. Seebohm says that they can be distinguished by their heavier weight, and Wolley also found that they were of a smoother texture. They are creamy white in colour. Axis, 1·9–2·1 inches; diam., 1·45–1·55.

Down.—Very pale, ashy-white and much mixed with tiny scraps of wood from the interior of the tree in which the nest is placed. The filamentous tips to the down are also ashy-white, and there is an indistinct white "eye"-spot.

THE HOODED MERGANSERS. GENUS LOPHODYTES.

Lophodytes, Reichenb. Av. Syst. Nat. p. ix. (1852).
Type, *L. cucullatus* (Linn.).

Count Salvadori separates the Hooded Mergansers from the True Mergansers on account of the form of the serrations in the bill. In both mandibles these are short and blunt, and are not distinctly inclined backwards at the tips. The genus *Lophodytes* is distinguished from the Smew by having the tarsus shorter than the culmen.

I. THE HOODED MERGANSER. LOPHODYTES CUCULLATUS.

Mergus cucullatus, Linn. Syst. Nat. i. p. 207 (1766); B. O. U. List Br. B p. 137 (1883); Seebohm, Br. B. iii. p. 633 (1885); Saunders, ed. Yarr. Br. B. iv. p. 509 (1885); ed. Man. Br. B. p. 485 (1889).

Merganser cucullatus, Macg. Br. B. v. p. 225 (1852).

Lophodytes cucullatus, Salvad. Cat. B. Brit. Mus. xxvii. p. 468 (1895).

Adult Male.—General colour above black, with a beautiful semicircular crest on the head; the anterior part of this crest black, the posterior half white, tipped with black, the white overspreading the hinder part of the crown and the ear-coverts; scapulars and wing-coverts black, those near the bend of the wing brown and the outer median coverts drab, forming a large patch on the wing; greater coverts black, tipped with white; quills dark brown, the secondaries blackish internally, white externally, forming a speculum; the inner secondaries black and slightly sickle-shaped, most of them with a median streak of white down the feather; rump and upper tail-coverts rather browner than the rest of the back; tail ashy; lores, sides of face, and throat black; remainder of under surface from the fore-neck downwards pure white, stretching backwards in a half collar on the sides of the neck, and separated by black on the sides of the chest from a second crescentic band of white on the sides of the upper breast, the feathers being tipped with black; sides of body and flanks ruddy-brown, inclining to chestnut on the latter, with numerous fine wavy lines of dusky-blackish; under tail-coverts white, freckled with grey; axillaries and central under wing-coverts white, those round the edge of the wing dusky-brown; bill black; feet yellowish-brown; iris bright yellow. Total length, 18·5 inches; culmen, 1·6; wing, 7·5; tail, 3·6; tarsus, 1·3.

Adult Female.—Smaller than the male, but nearly as fully crested. General colour dark brown, the head and neck lighter and more ashy-brown, the fore-neck more decidedly ashy; lores, upper throat, and a shade across the sides of the head ashy-whitish; crown brown, the crest being dull rufous, whitish at the ends of the feathers; wings dark brown, the inner greater coverts with white tips, the inner secondaries white along their outer webs, forming a small speculum, the innermost secondaries white down the centre; under surface of body white, the sides of the body brown, more ashy on the sides of the upper breast; bill and feet as in the male, but not so bright. Total length, 23 inches; wing, 7·3.

Young Males.—Resemble the old female and have a rufous crest, but this is smaller and less developed, and has not the hoary whitish ends to the feathers; the crown, sides of the face, and throat are dark brown, interspersed generally with a few black feathers; some of the flank-feathers are also rufous, with black cross-bars, much coarser than in the adult male.

Range in Great Britain.—Very few authenticated instances of the occurrence of the Hooded Merganser are on record, though it is indubitable that this North American species is an occasional visitant to our coasts. As might have been expected, the species has chiefly occurred off the shores of Ireland, where Sir Ralph Payne-Gallwey says that he has himself killed three specimens.

Range outside the British Islands.—That the present species is only an accidental visitor to Europe is proved by the fact that, beyond the British specimens, not a single instance of the occurrence of the Hooded Merganser on other coasts of Europe has been recorded. It is strictly a North American species, wandering south in winter to Mexico and the Greater Antilles.

Habits.—Like all the Mergansers, the present species is an expert diver. In its habits it does not differ from its allies, being shy during the breeding-season, and collecting in flocks in the winter.

Nest.—Placed in a hollow tree or hollow of a fallen log, the nest consisting merely of a little dry grass, and plentifully lined with down.

Eggs.—Five to eight in number. The first thing that strikes the observer is their curious roundness. In colour they are white or ivory-white. Axis, 2·0–2·25 inches; diam., 1·65–1·8

Down.—Very pale grey.

THE TRUE MERGANSERS. GENUS MERGANSER.

Merganser, Briss. Orn. vi. p. 230 (1760).
Type, *M. merganser* (Linn.).

Like the preceding genus, the Mergansers have the culmen, or ridge of the bill, longer than the tarsus, and, according to Count Salvadori, the serrations on both mandibles are very conspicuous and tooth-like, and are strongly directed backwards at the tips.

The range of the genus is very peculiar, for while it is principally a northern form, isolated species occur in the southern hemisphere, such as *M. brasilianus*, an inhabitant of South-eastern Brazil, and *M. australis*, confined to the Auckland Islands in the South Pacific Ocean.

I. THE GOOSANDER. MERGANSER MERGANSER.

Mergus merganser, Linn. Syst. Nat. i. p. 208 (1766); Dresser, B. Eur. vi. p. 685, pl. 452 (1875); B. O. U. List Br. B. p. 136 (1883); Seeb. Br. B. iii. p. 625 (1885); Saunders, ed. Yarr. Br. B. iv. p. 488 (1885); id. Man. Br. B. p. 459 (1889); Lilford, Col. Fig. Br. B. part xxiii. (1893).

Merganser castor, Macg. Br. B. v. p. 207 (1852); Salvad. Cat. B. Brit. Mus. xxvii. p. 472 (1895).

Adult Male.—General colour above black and white, the scapulars and mantle being black, extending a little on to the hind-neck; back dark slaty-grey, as also the rump and upper tail-coverts; the sides of the rump ashy-whitish, with fine dusky frecklings; wing-coverts pure white, the greater series with concealed black bases; bastard-wing, primary-coverts, and quills black, the inner primaries with a little whitish near the end of the inner web, like the primary-coverts; secondaries white, the inner ones bordered with black, the innermost somewhat sickle-shaped, and black like the scapulars; tail slaty-grey; head and throat black, with a green gloss, not so distinct on the sides of the face and throat; neck all round and the under surface of the body from the lower throat downwards white, with a delicate tinge of pale salmon-colour, more distinct in the breeding-season; bill deep vermilion, black along the culmen and on the nail; feet vermilion; iris reddish-brown. Total length, 27 inches; culmen, 2·3; wing, 11·2; tail, 4·2; tarsus, 2·0.

Adult Female.—Different from the male. Above slaty-grey, with dusky-blackish shaft-stripes to the feathers, the grey extending up the hind-neck, the head, crest, and upper neck being rufous, rather browner on the crown; the chin and upper throat white; the under surface of the body from the lower throat downwards white, washed with slaty-grey on the sides of the body, the flank-feathers being mottled with grey bars; wing-coverts grey, like the back; the greater coverts tipped with white, before which is a sub-terminal shade of black; quills as in the male, but the secondaries white with a concealed dusky base, the inner secondaries grey, like the back; tail dark slaty-grey; bill and feet coloured as in the male, but rather duller. Total length, 24 inches; culmen, 1·9; wing, 9·4; tail, 3·8; tarsus, 1·7.

Young Males.—Resemble the old females, but may generally be distinguished by the appearance of a few black feathers on the white chin or on the lower throat. One specimen in the British Museum shows distinct traces of wavy vermiculations on the flank-feathers.

Range in Great Britain.—This species is chiefly a winter visitor of the coasts of the British Islands. It breeds, however, in the Highlands of Scotland. In Ireland, as in most parts of England, it is only noted as a winter visitor.

Range outside the British Islands.—The Goosander is a Palæarctic species, and breeds in the north of Europe through Siberia to the Pacific, nesting in suitable localities even in Central Europe and in the Ural and Volga districts, while it is also found breeding in certain parts of Switzerland. In winter it visits most of the Atlantic coasts of Europe, the Mediterranean, and the inland waters of South-eastern Europe and the Caspian. At the same season it wanders to Japan and China. In North America it is represented by an allied species, *M. americanus* (Cass.), while the Goosander of Central Asia and the Himalayas is considered by Count Salvadori to be a distinct species, *M. comatus*. This is a smaller bird, with a prominent crest formed of the long and attenuated feathers of the hind-part of the head. The female is even more distinct than the male, and has the head of a dull pale rufous-colour, instead of chestnut, with some grey on the fore-part of the crown.

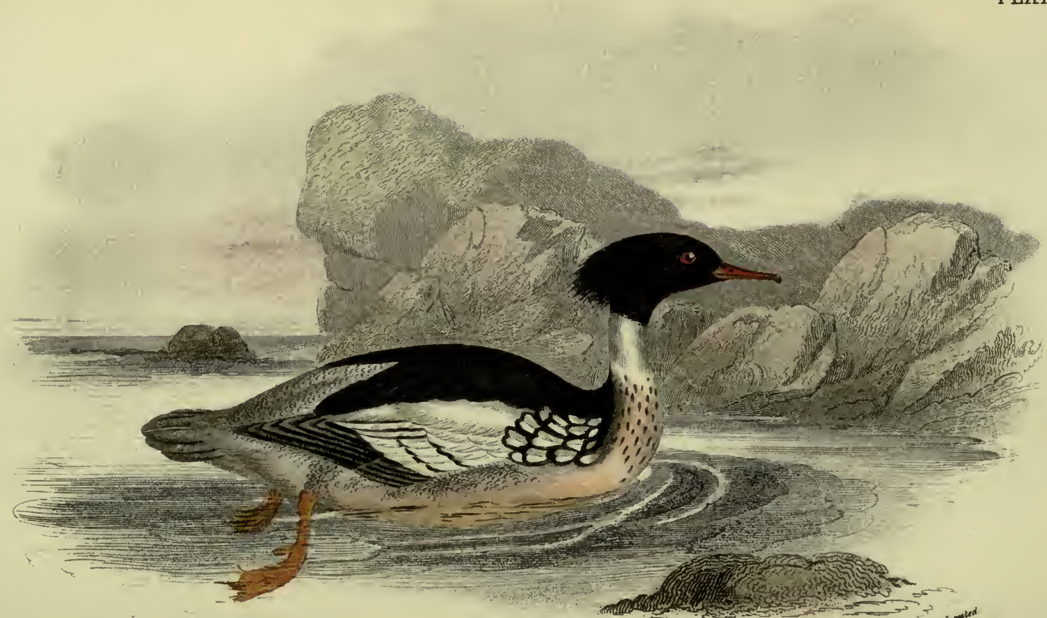
Habits.—The Goosander breeds rather early for a northern bird, the eggs being laid at the end of April in Denmark, but in some northern localities they are found from the middle of May to the middle of June.

Of its habits Mr. Seebohn writes:—"The backward position of the legs of the Goosander makes it look something like a Cormorant on the ground, and causes it to walk clumsily, but enables it to dive with facility and swim with ease, whilst its long wings give it great power of flight. It is said that it can remain for two minutes under water, and it sometimes reappears at a distance of fifty paces from the place where it plunged below the surface. It feeds almost entirely on fish, which its serrated jaws enable it to grasp with certainty, and it has been known to capture examples nearly six inches long. Water-insects and molluscs, and sometimes the remains of aquatic vegetation, are also found in its stomach. The Goosander is less of a marine Duck than most of the Diving Ducks, and appears to prefer rivers and small lakes to the sea-coast. It resembles the Diving Ducks in having a harsh note, not unlike the syllables *karr-karr*. The Goosander loves wild country, a combination of forest, swamp, river, and rock, such as is usually to be found near the Arctic Circle or near the northern limit of the pine-regions of lofty mountain-ranges farther south."

Nest.—Mr. Robert Read writes to me:—"Near Glasgow, in winter, I have counted over twenty Goosanders on a fresh-water loch, and have strong reasons for believing that the species may have bred there. A nest which I found in Perthshire was in the head of a hollow wych-elm tree in a steep wood sloping down to a large fresh-water loch. It contained twelve eggs of a buffish tint, the last laid being much paler than the others. It consisted simply of a mass of down of a pale lavender-colour, almost white, with which was mixed up a lot of chips and fine particles of rotten wood."

Mr. Seebohm further writes:—"The pale grey down of the

PLATE LXIV.



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RED-BREASTED MERGANSER.

INSTITUTION GLASGOW

Goosander points it out at once as one of the few species of Ducks which breed in holes, those which breed in the open having always dark down. The favourite nesting-place of the Goosander is in a hollow tree-trunk, but in localities where such sites are not plentiful, it shows considerable fertility of resource and capability of adaptation to circumstances in choosing the best substitute. On these occasions, however, it often displays more wit than wisdom. As the House-Martin has discovered that under the eaves of a roof a better shelter for its nest is to be found than under an overhanging cliff, so the Goosander immediately avails itself of the wooden boxes which the Finns fasten up in the trees to tempt them. These boxes, or "holkar," are made with a trap-door behind, so that the peasant may daily rob the nest, and thus make the too-confiding bird lay a score or more eggs before the wary man thinks it prudent to cease his depredations, and allow the Goosander to sit upon the rest for fear of spoiling his next year's harvest. If these boxes be not provided, and no hollow trees are available, the Goosander finds a hole under a rock or a cleft in the cliff, and has been known to utilise the old nest of a crow or bird of prey in a tree or the top of a pollard-willow."

Eggs.—From eight to twelve in number, of a creamy-buff colour. Axis, 2·5–2·9 inches; diam., 1·8–1·9.

Down.—Pale grey.

II. THE RED-BREASTED MERGANSER. MERGANSER SERRATOR.

Mergus serrator, Linn. Syst. Nat. i. p. 208 (1766); Dresser, B. Eur. vi. p. 693, pl. 453 (1874); B. O. U. List Br. B. p. 136 (1883); Seebohm, Br. B. iii. p. 629 (1885); Saunders, ed. Yarr. Br. B. p. 494 (1885); id. Man. Br. B. p. 461 (1889); Lilford, Col. Fig. Br. B. part xxi. (1892); Salvad. Cat. B. Brit. Mus. xxvii. p. 479 (1895).

Merganser serrator, Macg. Brit. B. v. p. 216 (1852).

(*Plate LXIV.*)

Adult Male.—General colour above black over the mantle, back, and scapulars, the outer of which are white, forming a broad longitudinal band down each side of the back; lower back, rump, and upper tail-coverts ashy-grey, densely freckled with wavy bars of dusky-black; wing-coverts for the most part white, those round the edge of the wing black; greater coverts black at the base, white for their terminal half; bastard-wing, primary-coverts, and quills black, the secondaries white with black bases, the inner ones white, with a narrow external border of black; head all round purplish-black, with a crest of narrow hair-like feathers, the sides of the crown and neck glossed with green; the neck all round white, forming a collar, with a narrow line of black from the nape to the mantle; the sides of the hind-neck vinous-chestnut, mottled with black edges to the feathers, this chestnut colour extending across the fore-neck; remainder of under surface of body white from the chest downwards; sides of the chest black, the feathers with a large white mark on the inner web, forming an ornamental patch; sides of the body ashy-grey, freckled with dusky vermiculations and cross-lines; axillaries and under wing-coverts white, the coverts round the edge of the wing dusky-brown; quill-lining ashy; bill bright vermilion, the nail black, and the ridge of the upper mandible dusky; feet bright vermilion; iris bright red. Total length, 22 inches; culmen, 2·4; wing, 9·9; tail, 3·5; tarsus, 1·6.

Adult Female.—Different from the male. Dusky-brown above, with ashy margins to the feathers; wing-coverts ashy-brown, with the greater wing-coverts and secondary quills as in the male, white with black bases, but the inner secondaries brown instead of white; crown of head dingy-brown, as also the occipital crest plumes; sides of the face and sides of neck dull rufous or reddish-brown, slightly paler and more vinous on the throat; the chin whitish; remainder of under surface of body from the lower throat downwards white; the sides of the body ashy-brown, with greyish edges to the feathers; axillaries and under wing-coverts white, those near the edge of the wing dusky-brown; bill and feet as in the male, but duller in colour. Total length, 21 inches; wing, 8·7.

Young Males.—At first resemble the female, but have a somewhat shorter crest. In their first spring they appear to develop the full characters of the adult bird, but retain for some time the rufous face and neck of the female plumage.

Nestling.—Dark brown above, white below, with brown on the lower flanks; three twin spots on the back, one pair behind the wing, another on each side of the lower back, and another on each side of the rump; head more reddish-brown; cheeks and a streak below the eye white; the ear-coverts and eyebrow rufous, this colour extending down the sides of the neck; from behind the eye a streak of dark brown.

Characters.—The Red-breasted Merganser is a smaller bird than the Goosander, and the male is distinguished by its rufous fore-neck and by the grey frecklings on the lower back and the wavy bars on the sides of the body, as well as by the white markings on the ornamental black patch at the sides of the upper breast. The females resemble each other more, but the smaller size of the Red-breasted Merganser and its browner colour distinguish it. The Goosander is altogether more grey, especially on the flanks, which are dark brown in the Red-breasted Merganser. In the female of the latter, moreover, the black bases to the white secondaries are more prominent, and the inner secondaries are margined with black.

Range in Great Britain.—The present species nests in Scotland and Ireland, but is only a winter visitor to the coasts of England, and is very seldom found inland. In the north and west of Scotland it breeds on the inland lochs as well as on the coasts and in the Hebrides, the Orkneys, and Shetlands. In Ireland, says Mr. R. J. Ussher, "it breeds, often in considerable numbers, chiefly on islands in lakes and estuaries, in Donegal, Down, Fermanagh, Westmeath, Louth, Tipperary, Kerry, Clare, Galway, Roscommon, Mayo, Sligo, and Leitrim. Next to the Wild Duck and Teal, this is the commonest breeding Duck in Ireland."

Range outside the British Islands.—The Red-breasted Merganser breeds throughout the northern portions of both hemispheres from the Atlantic to the Pacific, and wanders south in winter to the United States and the Bermudas. In the Old World it is found in winter throughout the Mediterranean, the Black Sea, and the Caspian, and in the east it visits China and Japan; but though it is found on the Persian Gulf in winter, it appears to visit India but rarely, as it has only been recorded twice, in each case from Sind.

Habits.—Like its relations, the Red-breasted Merganser is a good swimmer and diver, and in many of its actions resembles a Cormorant, especially in the way in which it rises in the water and "dips" when diving, and also in the habit of bring, ing the fish to the surface in order to swallow it. Its flight is strong and powerful, and the rapid motion of the wings produces a distinct whistling noise. Its food consists chiefly of fish, but it also eats crustacea and shell-fish. In winter the Mergansers assemble in parties, and even in the breeding-season several nests are found close together.

Nest.—Always placed in a sheltered situation and well concealed. Mr. Seebohm truly says that it likes to make its nest on an island wherever it is possible, and only breeds on the mainland in secluded districts. It prefers shelter of some kind, such as that of a large rock, or even rabbit-burrows or crevices in walls, as observed by Saxby in Shetland. The latter also says that a favourite place is in a hollow at the foot of a dry bank, where it is concealed by the over-hanging herbage. The nest itself is a hollow in the ground, lined with a little grass, dead leaves, or heather; but sometimes the down from the bird's body constitutes the only lining. Mr. Robert Read sends me the following note:—"The nest of the Red-breasted Merganser is nearly always placed on a rocky island with heather or wood-rush (*L. sylvatica*) growing among the boulders or on the shallow soil. The nest is usually placed between the boulders, or under a small tree, but sometimes in the heather in the open. I have twice found the nest under the overhanging bough of a spruce-fir close to the water's edge, the nest simply consisting of a hollow scraped amongst the fallen fir-needles, and lined with smoky-coloured down. On one nest, containing ten eggs, the old bird sat so closely that I was able to focus her with my camera, though she flew off before the picture was taken. The eggs in this case were only very slightly incubated.

Eggs.—From six to nine in number, but sometimes as many as ten, or even twelve; of an olive stone-colour to creamy-buff. Axis, 2·45–2·65 inches; diam., 1·7–1·8.

Down.—Greyish-brown, with an "eye" of dull white and hoary filamentous tips.

THE HERONS, STORKS, AND IBISES.
ORDER ARDEIFORMES.

These birds are very closely allied, as any naturalist must admit. They are all wading birds, and were classed of old in the Order Grallatores. In all of them the palate is desmognathous, or "bridged," and there are no basipterygoid processes. The nestlings are downy, and the young are fed in the nest by the parents for some time after they are hatched.

Four families are represented, the Herons (*Ardeidæ*), the Shoe-bills (*Balænicipitidæ*) of the Upper Nile, the Hammerheads (*Scopidæ*) of Africa generally, and the Storks (*Ciconiidæ*). The Ibises, which have a schizorhinal nostril, will be treated of farther on.

THE HERONS. SUB-ORDER ARDEÆ.

In these the hind-toe is on the same plane as the other toes, and is not elevated above their level, as in the Storks.

THE TRUE HERONS. FAMILY ARDEIDÆ.

The Herons constitute one of the most natural families of birds, and the various genera are well marked. The True Herons have a long thin bill with a distinct ridge, but no hook at the end. The outer toe has a distinct web near the base, but this web is scarcely perceptible at the base of the inner toe. On the breast are some curious downy patches, called "powder-downs," and the middle claw is combed, or "pectinated," like the claw of the Barn-Owl (Vol. ii. p. 106) or of the Night-Jar.

The curiously-shaped bills of the Shoe-bill (*Balæniceps*) and the Hammer-head (*Scopus*) distinguish these from other families of Herons, in addition to other remarkable characters. The Shoe-bills have powder-down patches, the Hammer-heads none, and there are other distinctive characteristics which do not here particularly concern us, as the representatives of these families are purely African.

THE PURPLE HERONS. GENUS PHOYX.

Phoyx, Stejneger, Proc. U.S. Nat. Mus. x. p. 311 (1887).
Type, *P. purpurea* (Linn.).

The Purple Herons are remarkable for their long toes, which differ from those of all other Herons. They have twelve tail-feathers, thus differing from the Bitterns, which have only ten, and the middle toe is very long, in fact equal to the tarsus in length. The hind-claw is very large and powerful, and is nearly straight, with a very slight curve.

I. THE PURPLE HERON. PHOYX PURPUREA.

Ardea purpurea, Linn. Syst. Nat. i. p. 236 (1766); Macgill. Brit. B. iv. p. 453 (1852); Dresser, B. Eur. vi. p. 217, pl. 396 (1875); Seebohm, Brit. B. ii. p. 473 (1885); Saunders, ed. Yarr. Brit. B. iv. p. 172 (1885); id. Man. Brit. B. p. 357 (1889); Lilford, Col. Fig. Brit. B. part xi. (1889).

Phoyx purpurea, Sharpe, Cat. B. Brit. Mus. xxvi. p. 60.

(*Plate LXV.*)

Adult Male.—General colour above dark slaty-grey, with the scapulars and inner secondaries elongated and composed of rufous and hoary-grey plumes; wing-coverts light slaty-grey, the lesser series inclining to maroon-brown; quills black, the secondaries externally greyer and glossed with olive-green, the inner ones almost entirely grey; tail grey; head crested, black, and having two long black feathers depending from the nape; sides of face and sides of neck bright chestnut, with a black line running from the base of the bill across the ear-coverts and uniting on the nape and extending down half of the hind-neck, which is slaty-grey; a second black line starting from the base of the bill and extending down the sides of the neck, where it forms a broad band; cheeks, throat, and fore-neck white, with some black streaks in the centre of the lower throat, these streaks becoming larger on the fore-neck; on each side of the latter a patch of drooping plumes, which are slaty-grey, the longer ones white at their ends; on each side of the chest a patch of maroon-chestnut plumes; breast and abdomen slaty-black; sides of body slaty-grey; thighs pale cinnamon; under wing-coverts chestnut; axillaries and quill-lining slaty-grey, with a wash of rufous on the former; bill brownish-black, the lower mandible brownish-yellow, the tip yellow; cere greenish-yellow; tarsi and feet black on their exterior face, brownish-yellow behind; bare part of thigh yellow; iris pale yellow. Total length, 30 inches; culmen, 4·8; wing, 14·3; tail, 5·0; tarsus, 5·2.

Adult Female.—Similar to the male, but not so brightly coloured, with the black ornamental plumes on the nape shorter. Total length, 30 inches; wing, 13·2.

Winter Plumage.—The black nape-plumes are absent, and the ornamental grey plumes of the back and scapulars and on the fore-neck are much less developed.

Young Birds.—Much browner than the adults, all the feathers of the upper surface being edged with sandy-buff; the reddish scapular-plumes very short and feebly developed; the inner secondaries strongly glossed with oily-green, with sandy-buff margins; neck yellowish-buff, with a slight tinge of chestnut; lower throat and fore-neck streaked with dusky-brown, the latter more broadly; forehead blackish, the hinder crown dull chestnut; sides of face uniform yellowish-buff; cheeks and upper throat white; sides of breast reddish-buff, mottled with grey bases to the feathers; centre of breast and abdomen buffy-white, streaked with dusky.

Range in Great Britain.—Mr. Howard Saunders estimates that nearly fifty examples, mostly young birds, of the present species have been obtained in the British Islands. As might have been expected, these occurrences have mostly taken place on our eastern coasts, and less frequently in the south. Only one example has been obtained in Ireland, a bird having been killed at Carrickmacross in 1834, and but three Scottish records are known, namely, from Caithness and Aberdeenshire more than forty years ago, while a young female specimen, shot near Prestonpans in October, 1872, is in the collection of Mr.

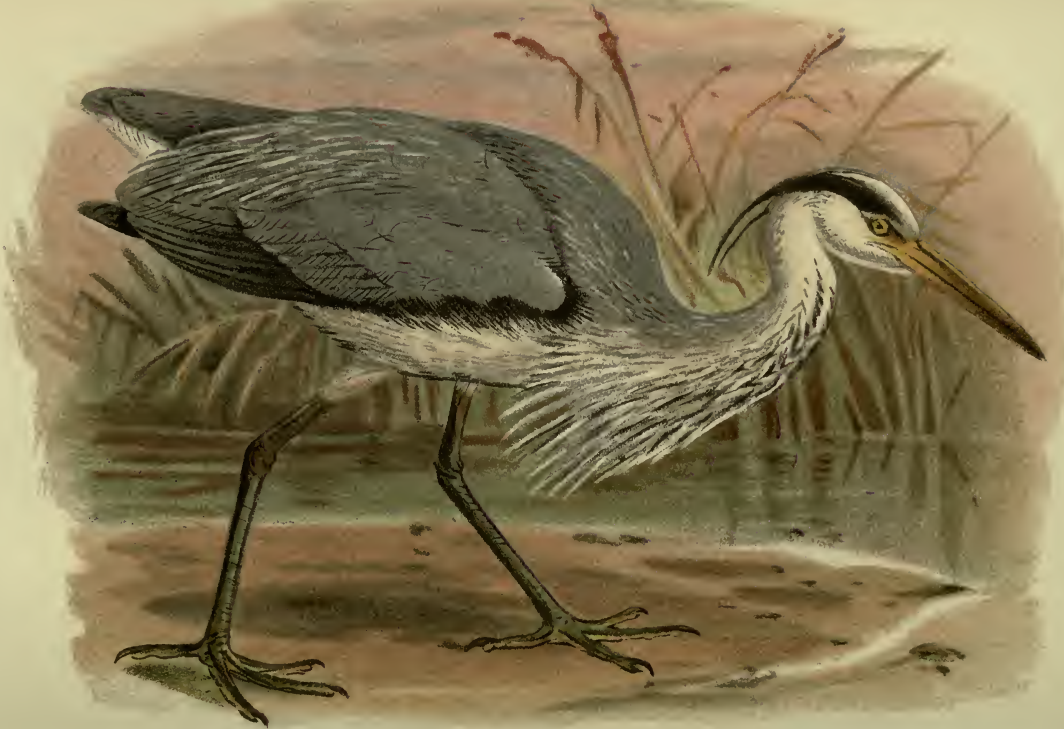
William Evans. Two examples in the National Collection, in full breeding-plumage, doubtless had a Dutch origin.

Range outside the British Islands.—The Purple Heron nests in suitable localities throughout Central and Southern Europe, and as far north as Holland. It is likewise a resident in Egypt, but also passes in winter down the Nile Valley to Abyssinia, and even to South Africa, where, moreover, it also breeds. Its eastern range is not known with exactitude, but it is probably the present species which breeds in Central Asia, as it certainly winters on the Persian Gulf, having been found at Fao by Mr. W. D. Cumming. In India, however, it is represented by an allied species, *Phoyx manillensis*, which has the fore-part of the throat and neck uniform rufous, without any black streaks. This form extends from the Indian Peninsula and Ceylon eastwards to Burma and Southern China up to the river Yangtze, and visits the Philippines, Borneo, and Celebes on its winter migrations.

Habits.—The Purple Heron is a frequenter of marshy grounds, where it loves to skulk among the reed-beds, and it is altogether less in evidence than the Common Heron. I made its acquaintance in the Hanság marshes in Hungary, and obtained three clutches of its eggs, but the birds were difficult to flush, and seemed to hide themselves as much as possible, till the approach of many boats caused them at last to take wing, but they did not return to their nests and complain like the Night-Herons. They feed largely on fish, and are said to be more active at night-time, resting during the day in the peculiar way that Herons have, standing perfectly motionless with their long necks stretched out, in an apparently uncomfortable position. They also devour frogs and small rodents as well as water-insects and their larvæ.

Nest.—In Europe a flimsy structure of reeds, a few of which are placed upon rushes which are bent down to form a nest. It is sometimes close to the ground in shallow water, but as often it is built upon reeds where the water is deep. In Ceylon, Colonel Legge has found the species nesting in trees along with the Great White Heron.

Eggs.—From three to five in number, of a greenish-blue colour. Axis, 2·1–2·4 inches; diam., 1·45–1·7.



COMMON HERON.

BAILLIE'S INSTITUTION GLASGOW

THE GREY HERONS. GENUS ARDEA.

Ardea, Linn. Syst. Nat. i. p. 283 (1766).
Type, *A. cinerea*, Linn.

In the genus *Ardea* the tail-feathers are twelve in number, but the middle toe is not so long as in *Phoyx*, the tarsus being longer than the middle toe and claw combined. The claw on the hallux, or hind-toe, is curved and is not half so long as the hallux itself. The edges of the mandibles are distinctly serrated and there is a faint trace of a notch just before the tip of the upper mandible. This notch, however, is often obsolete.

I. THE COMMON HERON. ARDEA CINEREA.

Ardea cinerea, Linn. Syst. Nat. i. p. 266 (1766); Macg. Br. B. iv. p. 440 (1852); Dresser, B. Eur. vi. p. 207, pl. 395 (1875); B. O. U. List Br. B. p. 107 (1883); Seebohm, Br. B. ii. p. 468 (1884); Saunders, ed. Yarr. Br. B. iv. p. 162 (1884); Lilford, Col. Fig. Br. B. part viii. (1888); Saunders, Man. Br. B. p. 355 (1889): Sharpe, Cat. B. Brit. Mus. xxvii. p. 76.

(*Plate LXVI.*)

Adult Male.—General colour above light ashy-grey, the scapulars and innermost secondaries elongated and drooping, forming ornamental plumes of pearly-grey or white; wing-coverts grey, the outer ones lighter and inclining to pearly-grey or white; quills black, the secondaries externally grey, the inner ones like the back; tail grey; crown of head crested, white in the centre, with a broad band of purplish-black on each side ending in a crest on the occiput, from which depend two long drooping black plumes; sides of face, neck, and under surface of body white, with a shade of creamy-lilac on each side of the fore-neck and chest, which have drooping plumes of narrow elongated white feathers; throat and fore-neck streaked with black; on each side of the crop a large patch of purplish-black, continued along the sides of the body as far as the sides of the vent; the sides of the body otherwise light ashy-grey; thighs and under tail-coverts white; under wing-coverts ashy-grey; bill yellow, with the ridge of the upper mandible brown towards the end; feet dull green; tibia yellow; claws black; bare loral space green; iris yellow. Total length, 30 inches; culmen, 5·1; wing, 18·0; tail, 7·2; tarsus, 6·8.

Adult Female.—Similar to the male and having the same ornamental plumes, but the nape-plumes are not so long as in the male, and the black on the side of the chest is not quite so pronounced.

Young Birds.—Differ from the adults in being duller and not so pure grey; the head dark slate-colour, with a small crest of purplish-black; neck, as well as the sides of the face and ear-coverts, ashy-grey; cheeks and throat white; neck dark slaty-grey, as also the sides of the body, under wing-coverts, and axillaries; lower throat, fore-neck, and chest very broadly streaked with black, especially on the throat, less markedly so on the fore-neck, and represented on the sides of the body by a few black streaks; the black patch on the sides of the chest in the adults represented by a patch of dusky feathers, streaked with white; a tinge of rust-colour on the bend of the wing, as well as on the black-streaked feathers of the throat and fore-neck.

Nestling.—A curious little creature, covered with greyish down, with very long and erect filamentous plumes of ashy-grey on the head.

Range in Great Britain.—The Heron is found everywhere throughout the British Islands, and, owing to the protection afforded to it in those places where heronries still exist, it is able to hold its own, though the number of breeding-birds is less than in former times. In Ireland Mr. Ussher says that it breeds in every county, "sometimes in solitary nests, sometimes in large heronries in trees, sometimes on the sea-cliffs, and where there are neither trees nor cliffs it has been known to breed in scrub or on the ground in islands in several lakes in Connemara." He has records of more than three hundred places in Ireland which are supposed to contain upwards of four or more nests.

Range outside the British Islands.—The Common Heron is an Old World species, and is almost universally distributed, but becomes much rarer in the east of its winter range, as it is not known from the Malay Peninsula, though it has occurred in Australia, and the British Museum has a Bornean specimen, procured at Baram Fort in Sarawak. It breeds throughout Europe and Asia south of about 60° N. lat., and migrates south in winter, visiting the Mediterranean countries and the African continent, though even in this southern habitat it also breeds in suitable localities. In India and China it likewise nests.

Habits.—Although a very shy bird as a rule, the habits of the Heron may be easily watched during the breeding-season, as will be seen from the interesting note given to me by Mr. Barrett-Hamilton. Young birds are more often procured than old ones, which are wary enough, but the young ones betake themselves to ponds and the edges of inland lakes, and on the sea-coast to the deep mud-gullies of our harbours, where it is often easy to stalk them. I have sometimes shot them under the latter circumstances with remains of down still adhering to the feathers of the crest. They are not uncommonly seen in the west of London, and sometimes pass quite low over my garden in Chiswick, on their way to a pond not two hundred yards from a road, though the birds are not allowed to alight without a severe mobbing from a pair of Jackdaws which nest in an elm-tree hard by.

Mr. Barrett-Hamilton sends me the following note:—"When protected, the Heron is not at all shy during the breeding-season, and I know of two or three heronries which are quite close to houses. Two of the nests in County Wexford are so close to a house that one can watch the birds with the greatest ease, and almost see into the nests. Occasionally the Herons are annoyed by the visits of Hooded Crows, and at such times the indignant Herons make a great clatter. I have seen a 'Hoody' sitting on the top of a spruce-tree watching the Herons, one of which would every now and then leave its perch and swoop round, when 'caa-caa-caa' would say the Crow, and start off in pursuit, and the ponderous Heron, being no match for his adversary in the air, would have to alight again to avoid his stoops. But when once he had done so, the Crow dare not touch him. Rooks, too, often annoy Herons at their breeding-places, and cause them to desert the latter. It is very interesting to watch a pair of Herons building their nest. One bird (presumably the female) stands on the nest, while the other goes away and collects sticks. These he brings in his mouth, and gives to his mate. The sticks are gathered on the ground, sometimes close to the tree in which is the nest, sometimes several hundred yards away. All sorts of sticks are collected. On approaching the nest the male, who is evidently very proud of his home and his mate, usually utters some loud croaks, at the same time straightening himself out in the air, and on alighting he sticks his crest bolt upright, all of which is no doubt for the delectation of the hen-bird. She gets up on her legs, which have been tucked in under her on the nest, takes the stick from him and arranges it. Then after a few minutes spent in preening his feathers, the cock goes off again, and the same routine is gone through. Apparently the male continues to bring sticks after incubation has commenced. Herons seem to make love to each other on their nesting-trees, and I have seen the male caressing the female on the nest. The nests are far from conspicuous for such large structures, even when the hen-bird is sitting, unless she shows the white part of her head. During incubation I have seen the birds change places on the eggs very neatly. One bird approached the nest, and just before it arrived the other, who was sitting on the eggs, glided off and left; the whole thing was done so quietly that it was almost as inconspicuous as if one bird had merely flown over the nest. Herons return to their nests early in January, but those pairs which have to build new nests naturally get their eggs laid later than those which have nests already built. The last young ones left on July 28th, 1891, and about the same time in 1892, but, after leaving the nest, they seemed to return for a few days to it every evening, probably for the night."

Nest.—This is a large structure, usually built on trees, but where these are not available it is sometimes placed on cliffs or shrub-covered crags and ruins. Mr. Robert Read writes:—"In an island off the west coast of Scotland I have found a colony of Herons nesting on low hawthorn-bushes. The bushes were very thick, and the nests about four feet in diameter, made externally of large sticks and lined internally with fine birch-twigs. The structure seemed to entirely cover the tops of the bushes, so that it was exceedingly difficult to get up and look into them. The three eggs which nearly every nest contained looked almost lost in the middle of such a big platform. There was a considerable mess on the ground beneath each nest, from the birds dropping their excrement over the edge of the nest. In only one nest did I find as many as four eggs."

Eggs.—Three or four in number, of a greenish-blue colour. Axis, 2·15–2·45; diam., 1·65–1·75. They vary somewhat in dimensions, and some are slightly paler blue than others. They are often laid in March in England, but a little later in Scotland, and in parts of Europe not till May and June.

THE GREAT WHITE HERONS. GENUS HERODIAS.

Herodias, Boie, Isis, 1822, p. 559.

Type, *H. egretta* (Wilson).

Though very much resembling the True Herons in structure, the Great White Herons may be distinguished by their snowy-white plumage and by having the edges of the mandibles not serrated, but a distinct sub-terminal notch is evident near the tip of the bill. The latter is long, as in most Herons, but the culmen does not exceed the length of the middle toe and claw. There are no crest plumes, but all the species carry an enormous dorsal train during the breeding-season.

It is extremely difficult to say how many species of *Herodias* exist. I have recently devoted much study to the Herons, which are very difficult birds to understand, and none are more so than the Egrets; but I have come to the conclusion that there are three species of Great White Heron, of which the European species (*H. alba*) has a black bill in summer, while the American bird (*H. egretta*) and the Chinese bird (*H. timoriensis*) have yellow bills in summer. As, however, our own *H. alba* has a yellow bill in winter like the other two species, it is extremely difficult to recognise them apart at that season of the year, but the colour of the bare tibiæ may ultimately be found to be a character of worth. *H. egretta* has the tibia black like the tarsus, while *H. alba* and *H. timoriensis* have them light-coloured.

I. THE GREAT WHITE HERON. HERODIAS ALBA.

Ardea alba, Linn. Syst. Nat. i. p. 239 (1766); Dresser, B. Eur. vi. p. 231, pl. 398 (1880); B. O. U. List Br. B. p. 108 (1883); Seebohm, Br. B. ii. p. 477 (1884); Saunders, ed. Yarr. Br. B. iv. p. 177 (1884); id. Man. Br. B. p. 359 (1889); Lilford, Col. Fig. Brit. B. part xx. (1891).
Egretta alba, Macgill. Br. B. iv. p. 466 (1882).
Herodias alba, Sharpe, Cat. B. Brit. Mus. xxvii. p. 90.

Adult Male.—Snow-white all over, with a dense dorsal train of elongated feathery plumes; the feathers on the fore-neck and on the sides of the upper breast also largely developed, and forming a kind of pectoral shield; bill black; lores and orbits pale green; tarsi and feet black, the tibia flesh-colour; iris pale yellow or buffy-yellow. Total length, 44 inches; culmen, 5·5; wing, 15·8; tail, 6·5; tarsus, 7·75.

Adult Female.—Similar to the male, but the ornamental plumes not so dense or so long.

Winter Plumage.—Differs from the summer plumage in wanting the ornamental plumes, and in having the bill yellow instead of black.

Range in Great Britain.—About eight occurrences of the Great White Heron were admitted by Mr. Howard Saunders in 1889 as being British. Of these, three were said to have been obtained in Yorkshire, one in Nottinghamshire, one in Oxfordshire, and another in Thorney Fen, in Cambridgeshire; but the number is reduced by Mr. J. H. Gurney. In Scotland two examples have been noted: one in the Firth of Forth and one at Loch Katrine. Several of the above were killed in summer.

Range outside the British Islands.—According to my present conclusions, this species is only found from Southern Europe to Central Asia, wintering in Africa and in North India and Burma. Some of the specimens from the last-named provinces may, however, turn out to be *H. timoriensis*, which inhabits Japan and Northern China, and migrates to Australia through the Malayan Archipelago.

Habits.—I saw a pair of this beautiful Heron standing on the shores of the Danube on my journey from Vienna to Budapest, but I did not meet with it during my expeditions to the Hanság marshes or to the Neusiedler Lake. Mr. Seebohm gives the following account of the species :—"The habits of this graceful bird resemble those of the Common Heron in many respects. It delights to frequent the outskirts of extensive swamps, the margins of rivers, and shallow weed-grown lakes, together with willow-thickets and other wooded country when it is flooded. It may frequently be seen in small parties of perhaps half a dozen individuals, walking sedately about mud-flats and low islands, or standing preening its brilliantly white plumage. It is a very conspicuous bird, and may be observed for half a mile or more; consequently it is very wary, and seldom allows the observer to come near. It looks remarkably graceful as it walks slowly up and down the marshy banks of a stream or stands motionless, sometimes on one leg, in the water, patiently waiting for food. Its flight is moderately slow, performed by a series of regular flappings of the wings. It seems more buoyant in the air than the Common Heron, and looks more graceful. Its flight is often prolonged for a considerable distance, and the bird is very conspicuous as it flaps slowly over the dense waving reeds. The Great White Heron may be seen in little parties all through the breeding-season, and in winter it congregates into much larger flocks. It also mingles freely with other species of Herons, but its large size is always enough to distinguish it from its congeners. It does not appear to frequent the most secluded and almost impenetrable reeds like the Bittern, but haunts the little open spaces and the borders of the swamps, and is very fond of the tangled herbage on the banks of a stream. It often wades for some distance in the water, and seems as partial to running streams as to still lakes and ponds.

"The food of the Great White Heron is principally composed of small fish, but great quantities of water-insects and their larvæ, frogs, and small mammals are captured. The bird appears to obtain the greater part, if not all, of its food in the day-time, but it may seek for it at night when the moon is at or near the full. The note is a harsh and deep bark, but it is only occasionally heard. The note of the young birds is described by Homeyer as *kek*, rapidly repeated."

Lord Lilford says that in captivity it exhibits a spiteful and unfriendly spirit to companions of its own species and to other

Herons, and in Epirus and the Ionian Islands, where he has procured the species, he found it much less wary than the Common Heron, nor did it show the skulking habits of the Purple Heron and some other members of the Family. As usual with Herons, the present species lives chiefly on fish, but also devours water-insects and small mice and rats. Lord Lilford says that during the heavy snowstorm of the 18th of May, 1891, one of his birds was observed "to devour several of the perishing Swallows and House-Martins, which incautiously fluttered within reach, in their vain search for their usual insect-food."

Nest.—A somewhat large structure, made of sticks, the lining consisting of smaller twigs. It is composed of dead rushes when it is built in swamps, and becomes trampled quite flat by the time the young have left the nest. This is repaired year after year.

Eggs.—These are four in number, of a greenish-blue colour, and not to be told from those of the Common or Purple Heron. Axis, 2·35–2·7 inches; diam., 1·7–1·75.

THE LITTLE EGRETS. GENUS GARZETTA.

Garzetta, Kaup, Natürl. Syst. p. 76 (1829).

Type, *G. garzetta* (L.).

The Little Egrets, while possessing the snowy plumage of the preceding genus, have a much longer and more slender bill in proportion to their size, and the culmen exceeds the length of the middle toe and claw. The tarsus is longer than the bill, and the dorsal train is very dense, and the long feathers are gracefully recurved. The head shows no absolute crest, but on the nape are some drooping white feathers, and on the chest there are also some lanceolate white plumes. Lord Lilford remarks that the Little Egrets erect their dorsal train when animated, which the species of *Herodias* never seem to do.

There are only two species of the genus *Garzetta*, the Little Egret of Europe and Africa (*G. garzetta*), which also extends

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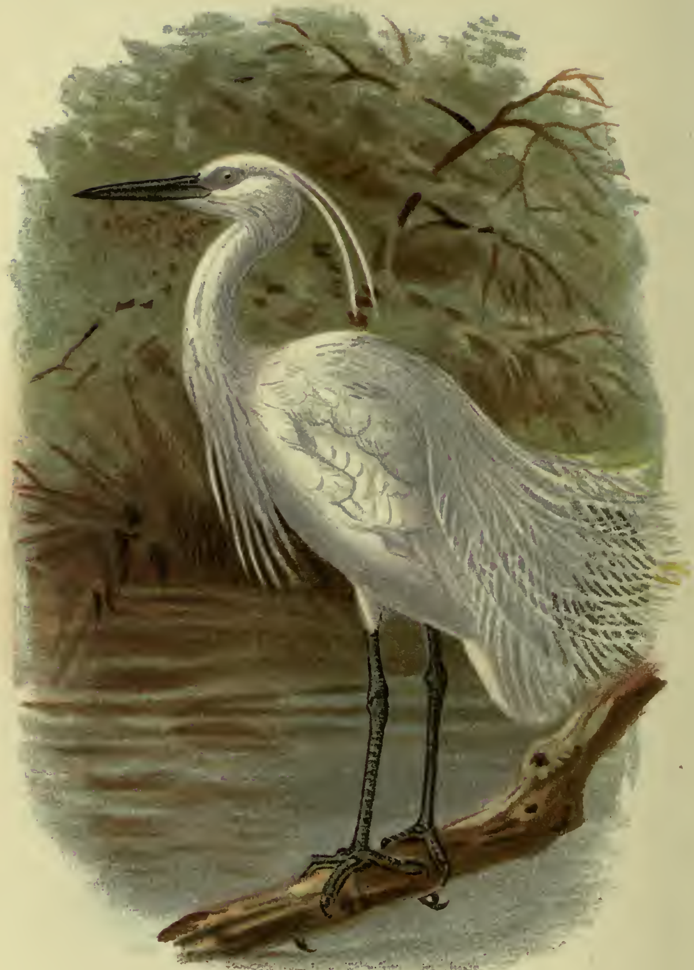

LITTLE EGRET.

INSTITUTIO

through Asia to China and Japan, and south to the Malay Peninsula and the Philippines. From Java, throughout the Moluccas to Australia, its place is taken by an allied species, *G. nigripes*, which has the toes perfectly black.

I. THE LITTLE EGRET. GARZETTA GARZETTA.

Ardea garzetta, Linn. Syst. Nat. i. p. 237 (1766); Dresser, B. Eur. vi. p. 239, pl. 399 (1880); B. O. U. List Br. B. p. 109 (1883); Seebohm, Br. B. ii. p. 481 (1884); Saunders, ed. Yarr. Br. B. iv. p. 182 (1884); id. Man. Br. B. p. 361 (1889); Lilford, Col. Fig. Br. B. part xxi. (1892).

Egretta garzetta, Macg. Br. B. iv. p. 471 (1852).

Garzetta garzetta, Sharpe, Cat. B. Brit. Mus. xxvi. p. 119.

(*Plate LXVII.*)

Adult Male.—Snowy-white above and below, with two elongated plumes drooping from the nape; a dense dorsal train, consisting of beautiful elongated feathers of decomposed texture, the long ones slightly recurved upwards at the ends; from the fore-neck depend some elongated lanceolate plumes; bill black; the bare skin about the eye and the base of the bill whitish-buff; tibia and tarsus black, the feet greenish yellow, the joints of the toes above spotted with black; iris pale ashy-yellow, with an outer circle of brownish-red. Total length, about 20 inches; culmen, 3·3; wing, 10·5; tail, 2·75; tarsus, 3·7.

Adult Female.—Similar to the male, but with the ornamental plumes somewhat less developed. Total length, 22·5 inches; culmen, 3·45; wing, 11·3; tail, 3·9; tarsus, 3·75.

Winter Plumage.—White, as in summer, but lacking the ornamental plumes on the nape and chest, as well as the dorsal train.

Young Birds.—Resemble the winter plumage of the adults.

Range in Great Britain.—Only one specimen seems authentically to have been established as having occurred in England, an adult bird killed at Countess Weir on the Exe on the 3rd of June, 1870; though Mr. Howard Saunders thinks that a second bird said to have been procured in Sussex may also be an authentic instance. In any case, the Little Egret is one of our very rarest visitors.

Range outside the British Islands.—Rare in Holland, Germany, and the north of France, and not wandering beyond the Baltic. In the Mediterranean countries it is more abundant, and extends into central Europe to Sclavonia and Hungary, while it breeds pretty commonly along the Lower Danube. From the Black Sea and the Caspian its range extends to India and Ceylon, the Burmese countries, China, and Japan. It seems to be found in most parts of Africa suitable to its habits, and it breeds as far south as the Cape Colony.

Habits.—Mr. Seebohm, who has had special opportunities for observing this bird on the Lower Danube, says that though it breeds principally in the densest willow-thickets, it frequents open marshes, sand-banks, and shallows in the river, and the margins of the streams, where its snow-white plumage makes it an extremely conspicuous bird. In its flight it resembles the other species of Herons, proceeding with steady flaps of its broad wings, having the head drawn up between the shoulders, and the legs extended so as to make a straight line with the back. Upon the ground it walks about with the sedate and easy action of the other Herons. It can scarcely be called a shy bird; but is, nevertheless, very difficult to shoot, except at its breeding-colony. It may often be seen standing in the water, but does not show any partiality for perching, except in the vicinity of its nest. The food of the Little Egret consists principally of fish and water-plants, but it also eats aquatic insects, frogs, and worms.

Nest.—The same author, in his "History of British Birds," gives a graphic account of a birds'-nesting expedition made by himself and Mr. John Young in the Lower Danube. He says that the breeding-place of the Little Egret was most difficult to find, as it was entirely hidden far in the forests of pollard-willows, where the water was often very deep. He at last found a colony of Night-Herons, Squacco Herons, and Little Egrets, and my own experiences in Hungary exactly agree with Mr. Seebohm's in this respect, that one may travel for a long distance in a marsh before discovering the actual breeding-place of any species of Heron. "In the forest," he says, "the water was about four feet deep; but on its outskirts it rose as high as the tops of the pollard-willows, which presented a dense mass of boughs through which it was impossible to force the boat. We succeeded, however, in entering it from behind, and by dint of pushing and squeezing, and a liberal use of the axe, we reached the outskirts of the colony, and having put on our wading-trousers proceeded to investigate it. The water was so deep that it was impossible for us to stoop, and it was with great difficulty that we selected places where the branches allowed us to squeeze through them. Before we reached the nests we could hear birds getting up with great flutter of wings, and our invasion of the colony was heralded by incessant cries. The trees were full of nests, some of them so near the water that we could see the eggs without climbing. Few nests were more than from ten to twelve feet above the surface of the water, and some trees contained as many as ten nests with eggs belonging to three species: the Night-Heron, the Little Egret, and the Squacco Heron, those of the Little Egret being the most numerous."

Lord Lilford writes:—"In habits it is by far the most confiding and fearless of man of any of the non-skulking *Ardeidæ* of my acquaintance. I have frequently approached on horseback or in a boat, without any sort of concealment, to within a few yards of a party of these Egrets, who took very little notice of us. It is probable, however, that the poor birds, or those that may be left of them, have learned that *feminine* fashion has cast its eye upon them for personal decoration, and that the lust of gain by this cruel folly has rendered the animal Man, as a rule, a very dangerous neighbour.

"The Little Egret spends its days in fishing, frogging, and insect-catching, with intervals for repose and digestion, on a bough, a post, or the back of some ruminant; this latter site, however, is, in my experience, much less frequented by this bird than by the Buff-backed Egret. I find the Little Egret somewhat delicate in confinement, but very tame and careless of observation. It is spiteful in disposition."

Nest.—The bird, according to Lord Lilford, forms an artless nest of a few sticks and broken reeds, placed in low trees or bushes in large swamps or marshes. Many pairs nest in close proximity, and very often in association with other tree-loving waders, such as the Night-Heron, Buff-backed Egret, Spoonbill, and Glossy Ibis. The uproar made by a breeding-colony of these birds, when disturbed and floating in the air over their nurseries, must be heard to be believed.

Eggs.—From three to six in number, of a greenish-blue colour. Axis, 1·65–1·9 inch; 1·2–1·35.

THE NIGHT-HERONS. GENUS NYCTICORAX.

Nycticorax, Rafin. Analyse, p. 71 (1815).

Type, *N. nycticorax* (L.).

The Night-Herons and their allied genera have twelve tail-feathers, but the tibia is not so bare as in the True Herons, the naked portion of the tibio-tarsus being less than the length of the inner toe. The bill is stout and of moderate length, without any serrations in either mandible, but showing a distinct notch just before the tip of the upper one; the culmen is about equal to the tarsus in length, and the tarsus is of about the same length as the middle toe and claw. There are generally two, sometimes three, drooping ornamental plumes on the nape.

The Night-Herons are found nearly all over the world, but do not range far to the northward, where the climate is unsuited to their habits. Ten species are known, of which the Common Night-Heron is the most widely distributed.

I. THE COMMON NIGHT-HERON. NYCTICORAX NYCTICORAX.

Ardea nycticorax, Linn. Syst. Nat. i. p. 235 (1766).
Nycticorax gardeni, Macg. Br. B. iv. p. 433 (1852).
Nycticorax griseus, Dresser, B. Eur. iv. p. 269, pl. 402 (1879); B. O. U. List Br. B. p. 110 (1883); Saunders, ed. Yarr. Br. B. iv. p. 195 (1884); Lilford, Col. Fig. Br. B. part vii. (1888); Saunders, Man. Br. B. p. 367 (1889).
Nycticorax nycticorax, Seeb. Br. B. iv. p. 496 (1884); Sharpe, Cat. B. Brit. Mus. xxvi. p. 146.

Adult Male.—Black, glossed with dark green, with a slight shade of grey on the mantle; upper scapulars like the back, the lower ones light ashy-grey; wings entirely light ashy-grey or dove-colour, with a slight shade of oily-green on the secondaries; lower back, rump, upper tail-coverts, and tail clear grey or dove-colour; head crested, black, with a dark green gloss, and having two long white nuchal plumes; base of forehead white, extending above the eye to behind the latter; feathers below the eye, cheeks, throat, and under-parts pure white; ear-coverts and sides of neck delicate isabelline-grey, extending in a collar round the hind-neck, and also to the sides of the body; thighs and under tail-coverts white; under wing-coverts and axillaries very pale ashy; bill slaty-black, with a whitish streak near the edges, the central portion of the lower mandible flesh-colour, greenish towards the base; skin round the eye pale green; tarsi and feet pale yellow; iris, crimson. Total length, 18 inches; culmen, 3·0; wing, 13·5; tail, 4·0; tarsus, 2·8.

Adult Female.—Similar to the male in colour, and having also ornamental plumes on the nape. Total length, 18 inches; wing, 14·0.

Winter Plumage.—Much greener than in the breeding-season, and having no white nape-plumes.

Young Birds.—Much browner than the adults, with longitudinal triangular centres of rufous or buff on the feathers on the back and wing-coverts; the quills and tail-feathers tipped with white; the head blackish, with the crest-feathers centred with rufous; sides of face and under surface of body fulvescent, streaked with dusky-black, with which the feathers are margined; thighs streaked like the sides of the body, as also the under wing-coverts and axillaries; throat whitish.

Range in Great Britain.—The Night-Heron has occurred in all three kingdoms, and specimens are shot nearly every spring and autumn, the records being chiefly from the southern counties of England. As Mr. Howard Saunders remarks, this interesting bird might even have bred in England, for a Mr. C. J. Bulteel records the destruction of eight birds in Devonshire—four males and four females—between the 23rd of May and the 22nd of June, 1849. This gentleman was, I believe, a "Reverend" one, and he will doubtless remain reverend in every respect excepting as regards the protection of rare birds in England.

Range outside the British Islands.—From Southern and Central Europe the Night-Heron extends across Asia to China and Japan, and again throughout Africa, always, of course, in localities suited to its habits. In North America it is also found in the temperate portions, ranging south through Central America to the West Indies, and to Colombia and Ecuador in South America. In Brazil its place is taken by an allied species, *N. tayazu-guira*, which ranges to Peru and south to Chili, Patagonia, and the Falkland Islands, while a third species, *N. cyanocephalus*, is found from Chili south to the Straits of Magellan.

Habits.—The Night-Heron is one of the skulking Herons, and, except at the breeding-places, is not easily observed. "It is," says Mr. Seebohm, "almost exclusively a swamp-feeding bird, and the stomachs of those I examined contained fresh-water crustaceans and the tender shoots of water-plants. It also feeds on small fish, small frogs and tadpoles, water-beetles, the larvæ of dragon-flies and other insects, worms and snails.

My acquaintance with the Night-Heron was made in the Hanság marshes in Hungary towards the end of May, 1891. On a very hot morning we had been pursuring a tortuous course through the reed-beds, a cavalcade of nineteen boats in all, listening to the varied calls of the marsh-birds, Terns, Geese, Wood-Sandpipers, Grasshopper-Warblers, Great Sedge-Warblers, &c., when the word was passed for silence, as we were approaching the nesting-place of the Night-Herons. As we drew near we could hear a croaking, but so silently had we come along that but few birds could be seen, until a shot from one of the leading boats startled the whole colony of Night-Herons into life, and the air became full of them. Their eggs were freshly laid, there were no young in the nests to awaken parental feelings, but their anxiety manifested itself in the way in which they flew round and round, hovering over their nests, and many victims fell before the colony elected to move farther off. The water was nearly up to one's waist, but my boatman volunteered to wade it, and soon returned with several birds and a hatful of eggs. All attempts to make him understand that I wanted the nests separately with the clutches of eggs in each failed, and it was only through some of my friends that I obtained clutches. While the birds hovered round their nests, they kept up a continuous clamour, and the general noise was deafening. While we were having lunch half an hour later I left my Night-Herons in the shade to be prepared later on, and was not best pleased to find that our host's keepers had amused themselves by plucking out the white breeding-plumes and sticking them in their hats. It was therefore with great difficulty that I ultimately secured some perfect specimens.

Nest.—This is a curious cradle-like structure of sticks, placed in the fork of a tree between three thin branches, and it is of so slight a structure that it is wonderful how the eggs can be retained in it. Such were all the nests in the colony we raided in Hungary, and no nests on reeds were discovered, though it is said that the Night-Heron occasionally makes such a nest.

Eggs.—Three to five in number, of a pale greenish-blue. Axis, 1·6–2·1 inches; diam., 1·25–1·5.

THE SQUACCO HERONS. GENUS ARDEOLA.

Ardeola, Boie, Isis, 1822, p. 559.

Type, *A. ralloides* (Scop.).

The Squacco Herons form a small group of four, or possibly five, species, confined to the Old World. Although approaching the Little Bitterns in size and general appearance, the Squaccos really belong to the group of True Herons. They have twelve tail-feathers, and the bill shows distinct serrations near the end of the upper mandible; the culmen is equal in length to the middle toe and claw. There is a well-developed dorsal train, and on the nape are some long ornamental plumes, depending over the neck.

I. THE SQUACCO HERON. ARDEOLA RALLOIDES.

Ardea ralloides, Scop. Ann. I. Hist. Nat. p. 88 (1769); Dresser, B. Eur. vi. p. 251, pl. 400, fig. 2 (1879); B. O. U. List Br. B. p. 109 (1883); Saunders, ed. Yarr. Br. B. iv. p. 191 (1884); id. Man. Br. B. p. 365 (1889); Lilford, Col. Fig. Br. B. part xxiv. (1893).

Botaurus comatus, Macg. Br. B. iv. p. 428 (1852).
Ardea comata, Seebohm, Br. B. ii. p. 486 (1884).
Ardeola ralloides, Sharpe, Cat. B. Brit. Mus. xxvi. p. 202.

Adult Male in Breeding Plumage.—General colour of the back pale vinous, including the ornamental plumes; the wings and tail white, the coverts with a slight yellowish shade, the inner secondaries also tinged with ochreous-yellow; entire head and neck pale straw-colour, inclining to golden buff on the lower hind-neck, as well as on the throat, fore-neck, and plumes on the sides of the neck and those on the sides of the chest; the feathers on the head and hind-neck narrowly edged with black lines, these lines being sub-marginal on the elongated nuchal plumes, the longest of which are white at the ends; chin white; on the throat and fore-neck some scanty lines of dusky-blackish, which are sub-marginal, as on the nuchal plumes; bill, according to Mr. Howard Saunders, cobalt-blue at the base, black at the point; feet yellowish-pink, the soles yellow; bare loral skin green; iris yellow. Total length, 21·0 inches; culmen, 2·6; wing, 9·2; tail, 3·2; tarsus, 2·7; middle toe and claw, 2·8.

Adult Female.—Similar to the male, but smaller, with a somewhat shorter crest and the dorsal train not so fully developed. Total length, 19 inches; wing, 8·1. Specimens in the British Museum show that the breeding-plumage is sometimes not assumed by the end of April. Mr. Howard Saunders says that this is usually the case in dry seasons, and it is evident that the birds return to Europe still in their winter dress.

Adults in Winter Plumage.—Earthy-brown on the back and scapulars, with some yellowish shaft-stripes on the latter; the lower back, rump, and upper tail-coverts white like the tail; wings white, the coverts washed with ochreous-buff, the inner secondaries earthy-brown like the back; head, neck, and underparts as in the summer plumage, but the crest plumes not so developed, and of the same colour as the crown; the long nape-plumes not developed; bill dark sap-green, feet darker; claws black; iris yellow; loral space green.

Young Birds.—Resemble the winter plumage of the adult, but are at once distinguished by the black shafts to the primaries, which are washed or dusted with ashy-brown on the outer webs or at the tips. In very young birds the tail is also washed with brown near the end.

Range in Great Britain.—A rare visitor, generally in immature or winter plumage, seldom in full dress. As, however, the occurrences have mostly taken place in spring or summer, the arrival of the specimens in winter plumage, as may be deduced from Mr. Howard Saunders' remarks in the "Manual," tends to prove the truth of my surmise that Squacco Herons come mostly in their winter plumage, and that they assume their breeding-plumage after they have arrived. Over forty examples of this Heron are said to have been obtained in the British Islands, most of them having occurred in the southern and eastern counties of England. Scotland provides two instances and Ireland three.

Range outside the British Islands.—The Squacco only visits Northern Germany and Northern France as a straggler, but in Central Europe and the Mediterranean countries it breeds in suitable localities. Its westward range extends to Mesopotamia and the Persian Gulf in winter, but it is found throughout Africa, partly as a breeding-species, partly as a winter visitant. In Madagascar, *A. idse* appears to take its place.

Habits.—In Spain, the Squacco Heron, according to Colonel Irby, is entirely migratory, and arrives during the month of April. He has never seen them following cattle, like the next species.

The food of the Squacco is decidedly varied, and consists of fish, mice, shrews, &c., as well as frogs, water-insects, molluscs, and small crustacea. Mr. Eagle Clarke gives a most interesting account of a visit to the marshes of Slavonia, where he found this species breeding in company with other Herons, Spoonbills, and Ibises; and it will give some idea of the extent of these breeding-colonies when he estimates one of them at 30,000 individuals. No wonder that, when they were in the air, they produced a "deafening sound" with their wings. The difficulty which Mr. Clarke, an accredited zoologist, found in getting a "permit" to collect, encourages a hope that these last resorts of Herons in Europe have not become available to the "plume" hunter, and that the ornamental feathers of the small Herons will still be safe on the backs of some of the unfortunate birds, instead of decorating the bonnets of women, who are responsible for the wanton massacre of these pretty birds at their nests, as they are also responsible for the sufferings and miserable death of the starving nestlings, deprived of the support of their parents!

Nest.—This is described by Mr. Eagle Clarke as like that of the Night-Heron, "composed entirely of sticks. The nests of the Little Egret and the Squacco were seldom to be seen in juxtaposition, probably on account of the pugnacious temperament of the latter."

Eggs.—From four to six in number, and of a greenish-blue colour. Axis, 1·7–1·85; diam., 1·3–1·4.

THE BUFF-BACKED CATTLE-EGRETS. GENUS BUBULCUS.

Bubulcus, Bp. Ann. Sci. Nat. (4) i. p. 141 (1854).
Type, *B. lucidus* (Rafin.).

I. THE BUFF-BACKED EGRET. BUBULCUS LUCIDUS.

Ardea lucida, Rafin. Caratteri, p. 3 (1810).
Ardea bubulcus, Audouin, Expl. Somm. Pl. Ois. de l'Egypte, i. p. 298 (1825); Dresser, B. Eur. vi. p. 245, pl. 400, fig. 1 (1879); B. O. U. List Br. B. p. 109 (1883); Seebohm, Br. B. ii. p. 492 (1884); Saunders, ed. Yarr. Br. B. iv. p. 187 (1884); id. Man. Br. B. p. 363 (1889); Lilford, Col. Fig. Br. B. part xiii. (1890).
Egretta russata, Macg. Br. B. iv. p. 474 (1852).
Bubulcus lucidus, Sharpe, Cat. B. Brit. Mus. xxvi. p. 213.

Adult Male.—General colour above and below pure white, the crest, which is very plainly developed, being of a vinous isabelline colour, the ornamental dorsal train being of the same colour; the fore-neck with some similarly coloured vinous plumes; bill chrome-yellow, paler towards the gape; tarsi and feet dusky-sooty; iris very pale chrome-yellow, darker towards the outer edge, the eyelids also pale chrome.* Total length, 19 inches; culmen, 2·2; wing, 9·8; tail, 3·25; tarsus, 3·2.

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* The colours of the bill and feet are taken from some notes made by Mr. Thomas Ayres, in the Transvaal.

Adult Female.—Similar to the male but with the ornamental plumes not so fully developed; bill and bare skin about the eye bright chrome-yellow; tibiæ and tarsi pale yellow; feet dusky-yellow. Total length, 18·5 inches; culmen, 2·3; wing, 9·3; tail, 3·1; tarsus, 3·3.

Winter Plumage.—Entirely pure white, with none of the ornamental dorsal train-feathers or of the vinous colour on the crown or fore-neck.

Young Birds.—Resemble the winter plumage of the adults and have no ornamental plumes. There is a slight tinge of rufous on the back.

Range in Great Britain.—Only one authentic occurrence of the Buff-backed Heron within our limits is known, shot as long ago as October, 1805, as recorded by Montagu. It is now in the Gallery of the British Museum (Nat. Hist.) at South Kensington.

Range outside the British Islands.—The present species is a bird of Southern Europe, or rather of the Mediterranean countries, and seldom reaches Central Europe, though it has been recorded from the South of France, Hungary, the Danube, Poland, and Southern Russia. It is distributed in suitable localities throughout Africa, and its eastern range extends to Fao in the Persian Gulf, where it has been found by Mr. W. D. Cumming, whose specimens are in the British Museum. In the southern part of the Caspian Sea its place is said to be taken by the Indian Buff-backed Heron (*Bubulcus coromandus*), a species which is found throughout the Indian Peninsula and Ceylon, and extends as far north as Corea and Japan, and as far south as Celebes and Timor in the Moluccas. The birds of the Caspian I should have expected to belong to the European and not the Asiatic species.

Habits.—Mr. Howard Saunders, who knows the species well from personal observation, says that it is very common in the marshes of Andalucia in Southern Spain, where thousands of individuals may be seen amongst, or on the backs of cattle, picking off ticks; whence the name "Purgabueyes," meaning "cattle-cleaners." Lord Lilford also states that he has found the species "in great abundance in the great marshes of the Guadalquivir below Seville during the summer. It breeds in that district in large colonies among the high reeds and bushes and is constantly to be seen amongst the herds of half-wild cattle, very often perched on the backs of the beasts, searching for ticks, which seem to constitute, if not the principal, at least a very favourite diet of the bird." The food of the Buff-backed Heron seems to consist more of insects than of fish, and beetles, grasshoppers, and locusts are its favourite food, though it also devours frogs.

Nest.—Composed of sticks, and built in the reed-forests, or, as Mr. J. H. Gurney found them in the Fayoom district in Egypt, "in a large bed of dead tamarisks, from two to five feet above the water." The species is a late breeder, and even in June Mr. Gurney found no young in the nests, while some of the latter where still being built.

Eggs.—From three to five in number, of a very pale greenish-white. Axis, 1·75–1·85 inch; diam., 1·4.

THE LITTLE BITTERNS. GENUS ARDETTA.

Ardetta, Gray, List Gen. B. 1842, App. p. 13.
Type, *A. minuta* (Linn.).

In the Bitterns, with which we commence the second section of the Herons, the tail-feathers are only *ten* in number, and the bill is always serrated. In the Little Bitterns the middle toe and claw are short, and only about the same length as the tarsus. In the True Bitterns (*Botaurus*) the tarsus is shorter and by no means equal to the middle toe and claw in length.

The Little Bitterns, too, have the sexes quite different in colour. They are distributed nearly over the entire globe.

I. THE LITTLE BITTERN. ARDETTA MINUTA.

Ardea minuta, Linn. Syst. Nat. i. p. 240 (1766).

Botaurus minutus, Macg. Br. B. iv. p. 423 (1852); Seeb. Brit. B. ii. p. 510 (1884).

Ardetta minuta, Dresser, B. Eur. vi. p. 259 (1880); B. O. U. List Br. B. p. 110 (1883); Saunders, ed. Yarr. Br. B. iv. p. 200 (1884); id. Man. Br. B. p. 369 (1889); Lilford, Col. Fig. Br. B. part xix. (1891); Sharpe, Cat. B. Brit. Mus. xxvi. p. 222.

BAILLIE'S
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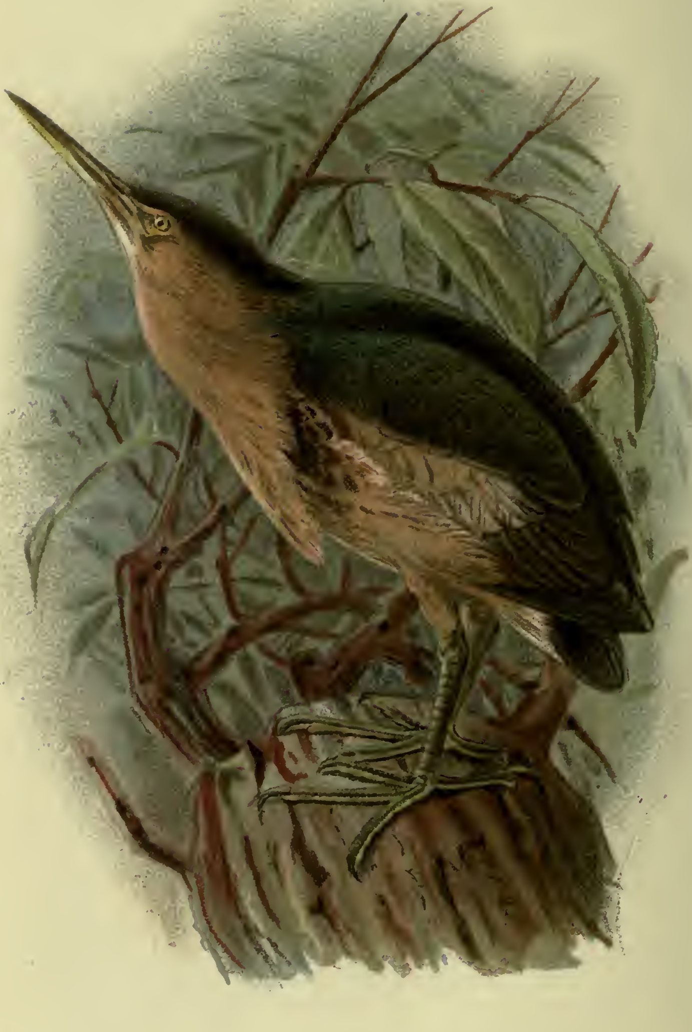
PLATE LXVIII



LITTLE BITTERN.

Ardeola minuta, Dresser, B. Eur. vi. pl. 401 (1880).

(*Plate LXVIII.*)

Adult Male.—General colour above black with a greenish gloss, including the scapulars, lower back, rump, and upper tail-coverts; lesser wing-coverts ochreous-buff, the median series lavender-grey; the greater coverts whitish; the bastard-wing, primary-coverts, and quills black; tail black; crown of head and crest greenish-black; hind-neck bare, but hidden by ruddy isabelline feathers; sides of face washed with vinous, the sides of the hinder crown decidedly more ashy; under surface of body ochreous-buff, the sides of the throat, abdomen, and under tail-coverts buff; the feathers of the chest elongated, some of the feathers white, buff towards their ends, the long feathers on the sides of the breast blackish with buff margins; the sides of the body with narrow mesial shaft-lines of brown; under wing-coverts and axillaries white; bill purplish-yellow; feet greenish-yellow, soles light yellow; iris orange-yellow. Total length, 11 inches; culmen, 1·9; wing, 5·7; tail, 1·8; tarsus, 1·75.

Adult Female.—Different from the male. General colour above chestnut-brown, including the scapulars and inner secondaries, all the feathers edged with ochreous-buff, producing a streaked appearance; wings and tail as in male; sides of face and the frill concealing the neck rather more rufous than in the male, the neck-feathers strongly inclining to chestnut; under surface of body distinctly streaked, with dusky centres to the feathers of the throat and fore-neck; the flanks and breast also streaked with blackish centres to the feathers. Total length, 12 inches; culmen, 1·9; wing, 5·8; tail, 1·8; tarsus, 1·8.

Range in Great Britain.—The Little Bittern, which visits the neighbouring countries of Europe every summer, has occurred on many occasions all over the United Kingdom, though naturally its presence has been more plentifully noted in the southern and eastern counties of England. That it formerly bred with us is undoubted, and, according to Mr. Howard Saunders, recent instances of its doing so are not unknown.

Range outside the British Islands.—The Little Bittern is generally distributed throughout Europe south of 60° N. lat., but is only a summer visitor, and leaves even the Mediterranean countries in winter. It is, however, resident in Northern Africa, Madeira, and the Azores. It visits Egypt and North-eastern Africa in winter, and that it goes still farther south, I firmly believe, though it is difficult to prove its African range. A specimen from Benguela, however, collected by the late Mr. Monteiro, appears to me to be the true *Ardetta minuta*, but Africa generally is inhabited by an allied species, *Ardetta podicipes*, which differs from the European form in having the wing-coverts orange-buff, and the greater series lavender-grey, while the neck-frill is bright chestnut instead of ochreous or ashy-fulvous. A further distinction in the African bird is the chestnut, instead of dusky, patch on the lesser wing-coverts.

To the eastward our Little Bittern extends to Cashmere and the Eastern Narra district in Sind, in both of which localities it breeds. It is also found, but rarely, in North-western India in the winter, as the Hume collection contains examples of the species from Delhi and Etawah.

Habits.—The Little Bittern is a skulking species, and is, moreover, a night-feeder as a rule. In many of its ways it resembles a Rail, as it threads its way through the reed-beds with great swiftness. It will also sometimes be found in trees, generally sitting quite still, with its bill pointing up in the air, but it can move from branch to branch with great ease and rapidity, and does the same in the reeds, to which it manages to cling without difficulty when making its way from one to another.

Lord Lilford, who met with this species in Corfu and the opposite mainland of Turkey during the first fortnight in April, writes as follows :—" For a few days after its arrival it may be met with amongst the currant-vines, in the young green corn, in gardens, among the rocks of the sea-shore, and often perched in olive- or orange-trees at a considerable height from the ground : from the actions of my dogs I believe that when these birds are disturbed in covert, they often sneak off in a crouching attitude with long strides, after the manner of a Rail, but quite as often, when closely approached, they behave in the same way as the Common Bittern under the circumstances,—drawing themselves out to their full length, with every feather tightly compressed, and beaks pointing straight to the sky, so as to present as narrow a front view as possible, with the object of attempting to escape observation from the similarity of the plumage of their necks and breasts to the brown and yellow tints of the reeds, flags, and other aquatic vegetation amongst which they are very often to be found. The food of the Little Bittern consists of small fishes, reptiles, and insects of all sorts. A friend informs me that one of these birds in his possession supported itself to a great extent by catching the mice and lizards that came into the aviary in which it was kept in the island of Teneriffe. . . . The only note that I ever heard uttered by this species is, to my ear, best rendered by 'woogh, woogh'—a sort of deep gutteral cough." The female is said to have a note like *gate* or *gett*, and Naumann says that that of the male resembles the syllable *pumm* several times repeated, then a long pause, and again uttered.

Nest.—According to Lord Lilford, the nest of the Little Bittern is usually, but not invariably, built amongst growing reeds, and he describes one as built entirely of dry flag-leaves. It is sometimes found on the heads of pollard-willows, and it has been also known to adapt the old nest of a Magpie in a tree near to a swamp.

Eggs.—From five to nine in number; white with a very faint tinge of green. Axis, 1·3–1·5 inch; diam, 1·0–1·1.

THE TRUE BITTERNS. GENUS BOTAURUS.

Botaurus, Stephens, in Shaw's Gen. Zool. xi. p. 592 (1819).
Type, *B. stellaris* (L.).

The Bitterns have ten tail-feathers and the bill serrated. The latter is moderately long, with the culmen about equal to the inner toe and claw. The middle toe and claw are very long, and far exceed the length of the tarsus. The hind-claw is also very long, and is nearly equal to the hind-toe in length. The plumage is wavy in character, and there is an immense frill on the neck.

The True Bitterns are nearly cosmopolitan, our European species being found throughout the Palæarctic Region, and being replaced in Africa by an allied form, *B. capensis*, which is a smaller bird, mottled, rather than barred, with rufous. In Australia and New Zealand occurs *B. pœcilopterus*, with brown quills, and in South America a peculiar barred Bittern, *B. pinnatus*. In North America the representative species is *B. lentiginosus*, described below.

I. THE COMMON BITTERN. BOTAURUS STELLARIS

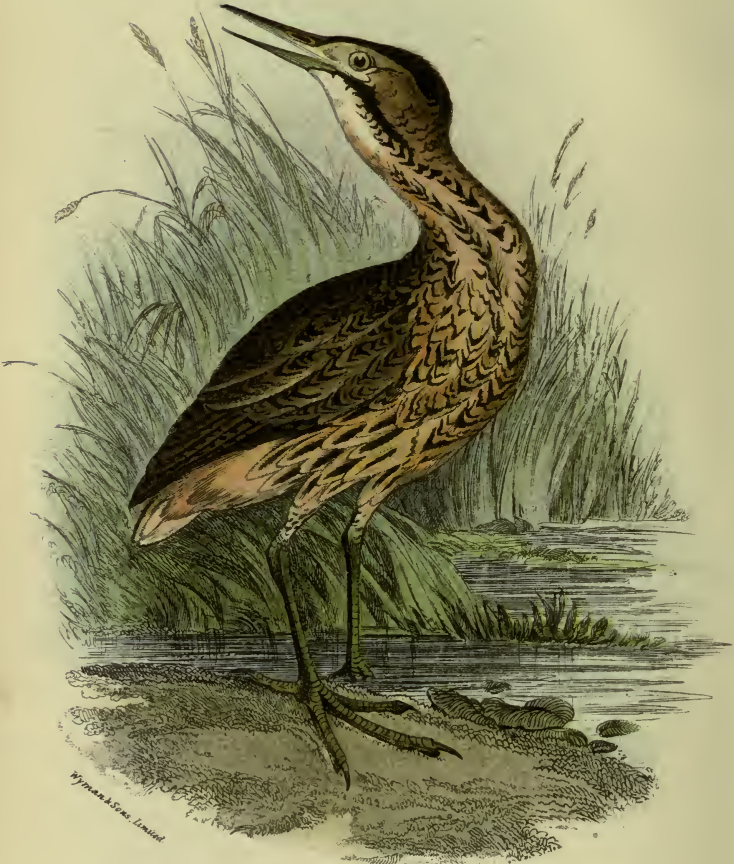
Ardea stellaris, Linn. Syst. Nat. i. p. 239 (1766).
Botaurus stellaris, Macg. Br. Br. iv. p. 410 (1852); Dresser, B. Eur. vi. p. 281, pl. 403 (1875); B. O. U. List Br. B. p. 111 (1883); Seebohm, Br. B. ii. p. 593 (1884); Saunders, ed. Yarr. Br. B. iv. p. 206 (1884); Lilford, Col. Fig. Br. B. part vii. (1888); Saunders, Man. Br. B. p. 371 (1889).

(*Plate LXIX.*)

Adult Male.—General colour above tawny-yellow and black, this latter colour predominating and occupying the centre of the feathers, the sides of which are tawny-buff, freckled and irregularly barred with black; lower back, rump, and upper tail-coverts pale tawny-buff, mottled with bars or cross-lines of dusky-brown; marginal wing-coverts rufous, regularly barred across with black; median and greater coverts tawny-buff, with irregular bars or arrow-shaped markings of blackish-brown, much less pronounced on the greater coverts, all of which have a rufescent tinge near the base; bastard-wing, primary-coverts, and quills blackish, barred with rufous, the bars somewhat broken up on the inner webs of the quills, which are also paler, the inner secondaries, like the scapulars, being tawny-buff on their edges, and mottled in a similar manner; the tail-feathers tawny-buff, irregularly mottled with black bars or cross-markings, more pronounced on the centre of the feathers; crown of head uniform black, with a frill of erectile plumes on the nape, these being tipped with tawny-buff, and the pale tips crossed with lines of black; eyebrow, sides of face, and sides of neck tawny-buff, the eyebrow uniform, except on the upper edge, where the feathers are barred with black; the ear-coverts

INSTITUTION GLASGOW

PLATE LXIX.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COMMON BITTERN.

almost uniform, but the plumes on the sides of the neck narrowly barred with black, and widened into a frill which covers the hind-neck, the latter being clothed with dense down of a tawny-buff colour; the feathers below the eye, and a streak along the cheeks, and down the sides of the neck, black; a malar line of feathers and the throat creamy-white, with a central line of reddish-buff feathers, slightly mottled with black bases; the lower throat also creamy-white, with four or five tolerably defined broad lines of tawny-buff and black mottled feathers; the lower part of the ruff on the fore-neck with narrow wavy lines of black; the breast covered with tawny-buff down, concealed by a large patch of loose plumes on each side of the chest, these being mostly black with tawny-buff margins; remainder of under surface creamy-white, streaked with black centres to the feathers, the black markings slightly broken up with tawny-buff mottlings, the thighs and under tail-coverts scarcely marked at all; under wing-coverts and axillaries tawny-buff, the former narrowly lined with blackish, the axillaries more distinctly barred with dusky-blackish; bill greenish-yellow; bare loral space yellowish-green; feet yellowish-green, the claws dark brown; iris yellow. Total length, 24 inches; culmen, 2·75; wing, 13·0; tail, 4·4; tarsus, 3·8.

Adult Female.—Similar to the male.

Young.—Does not differ from the adults, except that the primary-coverts and quills are nearly uniform, with only a certain amount of rufous mottlings on the inner webs.

Nestling.—Covered with down of a yellowish-buff colour.

Range in Great Britain.—The Bittern used to be one of our native birds, but the gradual draining of the meres and swamps has resulted in the extinction of the species as a breeding-bird in Great Britain. Even now, however, a little protection afforded to the Bitterns which visit us in spring would doubtless re-establish the species in England, and then, as Mr. Howard Saunders remarks, "the 'boom' of the Bittern might again be heard in our land." It occurs at intervals in winter and spring in different parts of the three kingdoms, and within recent years I have seen specimens shot in the Thames Valley.

Range outside the British Islands.—The Bittern is generally distributed throughout Europe and Asia, but does not extend very far north, and in many of the southern countries it is known chiefly as a migrant, and breeds sparingly. It has not been found in Norway, but visits Southern Sweden up to about 60° N. lat. In Russia it is found up to about 62° N. lat., but in Eastern Russia and Western Siberia its range does not extend beyond 57° and 68° N. lat., respectively. In winter it visits North-eastern Africa, India, Burma, and China.

Habits.—The Bittern is such a shy and retiring bird that very little is known of its way of life, as it is an inhabitant of the great reed-swamps, where its haunts are difficult to penetrate. Thus it is seldom seen on the wing, and when flushed, it flies but a little distance, with a slow and steady flight, its head drawn in on its shoulders, and its feet stretched out behind in a line with the body. As a rule, it is a solitary bird, and is only found in pairs at its breeding-places, but on migration it has been noticed in larger numbers, forty or fifty being seen on the wing at once.

Mr. Seebohm writes on the note of this bird, which is so often spoken of as "booming":—"It is far more nocturnal than any of the Herons, and the 'boom,' or love-song, of the male is heard at all hours of the night during the breeding-season, and never in the day. It is a weird, unearthly noise, not to be dignified with the name of a note, and may be heard at a considerable distance. The bird is so shy that the noise is instantly stopped on the slightest alarm. Some writers have likened it to the bellowing of a bull, others think it resembles the neighing of a horse, while more imaginative ornithologists trace in it a resemblance to their ideal conception of demoniac laughter. It consists of two notes, one supposed to be produced as the bird inhales, and the other as it exhales its breath. Naumann attempts to express it on paper by the syllabus *ii-prumb*, repeated slowly several times. The call-note, which is common to both sexes, is a hoarse croak, like the *ca-wak* of a Night-Heron, or the cry of a Raven, and is sometimes heard when the birds are on migration; but the 'boom' is only heard from the reeds, and as it is uttered the bird is said to stand with its neck stretched out, and its beak pointing upwards. The Bittern rarely perches in a tree, but on its first arrival at its breeding-grounds it is said to roost on a sheltered branch until the reeds have grown high enough to conceal it. It is a voracious eater, fish six inches long, eels twice that length, and even a water-rat, have been found in its stomach, but its principal food consists of small fishes, frogs, and water-insects of all kinds, occasionally varied with the tender shoots of water-plants."

Nest.—Composed of dry rushes, placed on the ground in a dense reed-swamp.

Eggs.—From three to five in number, of a brownish-olive colour, with a faint greenish tint when fresh. Mr. Seebohm says that, when held up to the light, they are yellowish-brown inside, not green like the eggs of the Heron. Axis, 2·0–2·25 inches; diam., 1·45–1·55.

II. THE AMERICAN BITTERN. BOTAURUS LENTIGINOSUS.

Ardea lentiginosa, Montagu, Suppl. Orn. Dict. (1813).
Botaurus lentiginosus, Macg. Br. B. iv. p. 417 (1852); Dresser, B. Eur. vi. p. 289, pl. 404 (1878); B. O. U. List Br. B. p. 111 (1883); Seebohm, Br. B. ii. p. 506 (1884); Saunders, ed. Yarr. Br. B. iv. p. 213 (1884); id. Man. Br. B. p. 373 (1889); Lilford, Col. Fig. Br. B. part xxiv. (1893).

Characters.—The wavy plumage of the Bitterns involves such long descriptions that it is not necessary to do more, in the case of an accidental visitor like the present bird, than to state that the American Bittern can always be distinguished by its uniform brown head, and by the rufous tips to the primary-coverts and quills, which are uniform slaty-grey or slaty-black. Total length, 28 inches; culmen, 3·1; wing, 11·2; tail, 3·6; tarsus, 3·75.

Range in Great Britain.—It is a curious fact that a common North American bird like this Bittern should have been first described by Colonel Montagu from an English specimen which occurred in Dorsetshire in 1804. It is an accidental visitor to Great Britain, and has occurred many times. A specimen from Cornwall was shown to me at the British Museum by the gentleman who shot it about thirteen years ago, and it has been met with in nearly all our southern and western counties, as well as in Scotland and Ireland.

Range outside the British Islands.—The American Bittern breeds over the greater part of North America from Canada to Texas, and has even been found as far north as the Arctic Ocean and on the Mackenzie River. It winters in Central America and the West Indies. It has never occurred on the Continent of Europe, but one example was procured in Guernsey in October, 1870.

Habits.—These are very similar to those of our Common Bittern, and in the breeding-season it has a peculiar note, like *pomp-au-gör*. It is also called "Stake" or "Post-driver," from its note resembling the noise made by driving a stake in boggy soil. Another rendering by Mr. Samuels is *chunk-a-lunk-chunk*, *quank-chunk-a-lunk-chunk*. Dr. Coues writes :—"When the Bittern is disturbed at his meditations, he gives a vigorous spring, croaks at the moment in a manner highly expressive of his disgust, and flies off as fast as he can, though in a rather loose, lumbering way. For some distance he flaps heavily with dangling legs and outstretched neck; but when settled on his course he proceeds more smoothly, with regular measured wing-beats, the head drawn in closely, and the legs stretched straight out behind together, like a rudder. He is very easily shot on the wing—easily hit, and drops at a touch even of fine dust-shot. When winged, he croaks painfully as he drops, and no sooner does he touch the ground than he gathers himself in defensive attitude to resist aggression as best he can.

"The food of this bird consists of various kinds of small aquatic animals. In its stomach may be found various molluscs, crawfish, frogs, lizards, small snakes and fishes, as well as insects. Such prey is caught with great address by spearing, as the bird walks or wades stealthily along. The thrust of the bill is marvellously quick and skilful—more action is displayed on such occasions than probably under any other circumstances."

Nest.—Of dead rushes, on the ground or in trees at a slight elevation.

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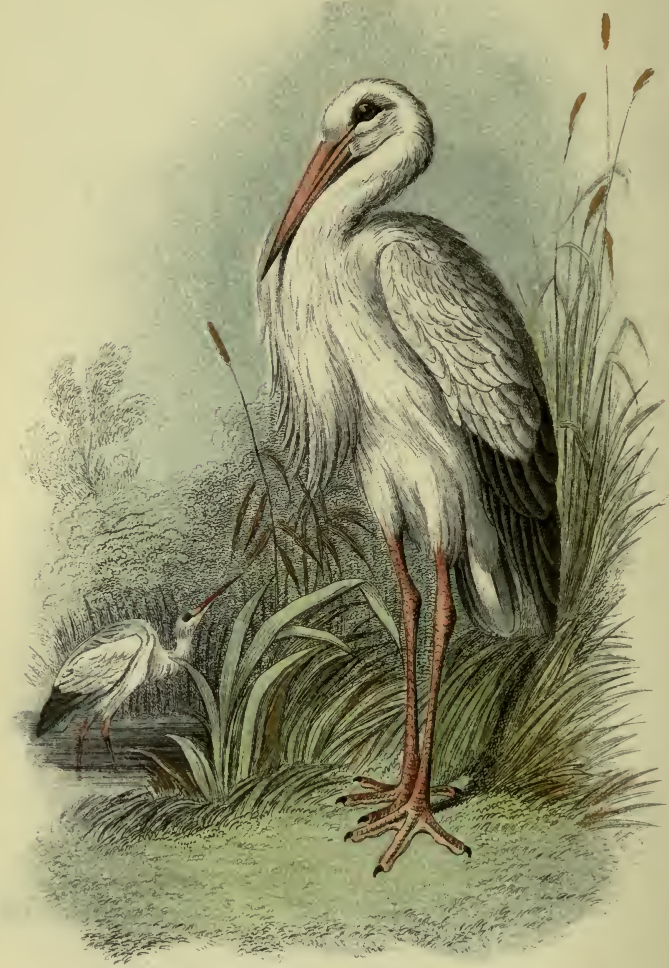
PLATE LXX.



WHITE STORK.

Eggs.—From four to seven in number; uniform brownish-olive. Axis, 1·85–2·0 inches; diam., 1·45-1·5.

THE STORKS. SUB-ORDER CICONII.

The Storks are very closely allied to the Heron, and have a bridged, or "desmognathous," palate. They differ, however, in several important particulars from the foregoing birds, as they have no powder-down patches, and no pectination, or "comb-" like process, on the middle toe. Both toes are webbed at the base, the outer one especially, but the chief difference is found in the position of the hind-toe, or hallux, which is elevated above the plane of the other toes, and is not on the same level with them.

THE TRUE STORKS. GENUS CICONIA.

Ciconia, Briss. Orn. v. p. 361 (1760).
Type, *C. ciconia* (L.).

As regards the British species, the characters given above are sufficient to distinguish the Storks from the Herons and Ibises.

I. THE WHITE STORK. CICONIA CICONIA.

Ardea ciconia, Linn. Syst. Nat. i. p. 235 (1766).
Ciconia alba, Bechst. Naturg. Deutschl. iii. p. 45 (1793); Macg. Br. B. iv. p. 481 (1852); Dresser, B. Eur. vi. p. 297, pl. 405 (1873); B. O. U. List Br. B. p. 112 (1883); Seebohm, Br. B. ii. p. 525 (1884); Saunders, ed. Yarr. Br. B. iv. p. 219 (1884); id. Man. Br. B. p. 375 (1889); Lilford, Col. Fig. Br. B. part xxiii. (1893).

(*Plate LXX.*)

Adult Male.—General colour white above and below; the scapulars, greater wing-coverts, and the quills black, with a grey powdering on the outer web of the secondaries; bill dull vermilion; feet a little lighter vermilion, more of a salmon-red; bare skin of face round the eye black; iris black. Total length, 36 inches; culmen, 8·3; wing, 23·5; tail, 9·8; tarsus, 8·8.

Adult Female.—Similar in colour to the male. Total length, 36 inches; culmen, 8·1; wing, 23·0; tail, 9·8; tarsus, 9·0.

Young Birds.—White like the adults, but the quills browner.

Range in Great Britain.—As might have been expected from their proximity to the Continent, the southern and eastern counties of England are those in which the Stork most frequently occurs, and there can be little doubt that, if unmolested, the species would establish itself in England as a regular visitor, for our country offers every condition under which the species flourishes in other countries of Europe. Its visits to Scotland are rare, and in Ireland it is only known to have occurred twice, each time in Co. Cork.

Range outside the British Islands.—Throughout Central Europe the Stork breeds regularly, but is less common in the Mediterranean countries, where it is chiefly known as a regular migrant, except in Spain, where it breeds plentifully. Its northern range extends to Scandinavia, and it is found eastwards to Central Asia, though in Eastern Siberia, Corea, and Japan its place is taken by *Ciconia boyciana*, which has a black bill and red lores. The White Stork visits India in winter, and also extends its range to South Africa, where it sometimes remains to breed, especially when locusts are abundant.

Habits.—To see the Storks in life it is not necessary to go farther than Holland, and in May, as the steamer goes up the Maas, a bird may often be seen in the early morning, flying from shore to shore, with a heavy flapping flight, its great wings expanded, so as to show the black quills in contrast to its snowy-white plumage. It is also impossible to take a country walk in Holland without seeing a Stork's nest in some of the gardens or fields, where some accommodation in the shape of a post and a cradle is put up for the birds to build their nests on. Occasionally an old cart-wheel is thus erected, which is immediately appropriated by a pair of Storks, so bent are the Dutch on encouraging these birds, which are supposed to bring good luck with them. In many places the Stork nests on the roof of a house, and sometimes many nests are found together, but it will also build in trees and even on cliffs.

Colonel Irby writes:—"The White Stork, owing to the protection it everywhere receives, is much more abundant in Marocco than in Andalucia, although plentiful in some level districts in the latter country, being most common in the marismas and the vicinity of Seville, nesting on some of the churches in that city. On the African side of the Straits, in many situations they breed on trees, generally in colonies, as well as on houses, but usually near villages; and almost every Moorish hovel has a Stork's nest on the top, a pile of sticks, lined with grass and palmetto-fibre. It usually contains four white eggs, which are very rarely marked with pink blotches. These are sometimes laid as early as the 25th of March, and are very good eating, either hot or cold. When boiled hard, they have the white clear, as with Peewits' or Plovers' eggs, the yolk being of a very rich reddish-yellow.

"The White Stork is rather irregular as to the time of nesting, for we found in Marocco on the same day (the 25th of April) young birds, eggs, and unfinished nests; and, to show how varied is the time of migration, we saw on that day a flight of about a hundred flying northward at an immense height. As they passed over the "storkery," which was in a large grove of high trees, they lowered themselves to within a hundred yards or so of the nests, and after wheeling round for a few minutes, as if to see how affairs were going on, they worked up in a gyrating flight to their original elevation, and continued their northerly journey, doubtless to the great delight of the resident Storks, who were in a great state of perturbation and disturbance at the appearance of their brethren. I may here remark that Storks usually migrate in large flocks at a great height, with a gyrating flight. The earliest date of their arrival that I noticed near Gibraltar was on the 11th of January, and they nearly all leave by the end of September. They are most useful birds, feeding on insects of all kinds, mice, snakes, and other reptiles, and certainly deserve all the protection and encouragement which they receive in Marocco, where they are, in consequence, excessively tame. Their grotesque actions when nesting, and their habit of continually clacking their bills together, making a noise like a rattle, render them very amusing to watch." (Orn. Gibr. 2nd ed. p. 209.) It appears that the Storks have no note beyond the clacking noise made by their bill.

Nest.—Of considerable size, built of large and small sticks mixed, as Mr. Seebohm informs us, "with lumps of earth and masses of decayed reeds; it is very shallow, and is lined with softer materials of all kinds—dry grass, moss, hair, feathers, rags, bits of paper, wool, or anything it can pick up." Incubation lasts about a month, and the young when newly hatched are clothed with down of an ashy-whitish colour, the bare spaces being at first very clearly marked.

Eggs.—Three to five in number; dull white and rather rough, with little gloss. Axis, 2·55–2·95 inches; diam., 2·0–2·15.

II. THE BLACK STORK. CICONIA NIGRA.

Ardea nigra, Linn. Syst. Nat. i. p. 235 (1760).
Ciconia nigra, Macg. Brit. B. iv. p. 485 (1852); Dresser, B. Eur. vi. p. 309, pl. 406 (1873); B. O. U. List Br. B. p. 112 (1883); Seebohm, Br. B. iv. p. 529 (1884); Saunders, ed. Yarr. Br. B. iv. p. 225 (1884); id. Man. Br. B. p. 377 (1889); Lilford, Col. Fig. Br. B. part xx. (1891).

Adult Male in Breeding-Plumage.—General colour above glossy, for the most part metallic-purple with green margins to the feathers, the green predominating on the neck and mantle and the lesser wing-coverts, the median and greater coverts more distinctly purplish but with bronzy reflections; primaries black with a greenish gloss; lower back, rump, and upper tail-coverts dusky-brown, with purplish edgings, becoming green on the latter; tail-feathers glossy purplish-bronze; crown of head dusky-blackish, glossed with green, especially towards the nape; the neck all round green, with a strong gloss of purple on the hinder neck, and again on the lower throat; sides of face and upper throat brilliant purple, with golden-bronze reflections; fore-neck and chest greenish, with a slight purple gloss; remainder of under surface, from the chest downwards, pure white, including the axillaries; under wing-coverts dusky slate-colour, with a slight gloss of green or purple; "bill, orbital space, and pouch coral-red; legs and feet coral-red, blackish on front of tarsi; iris brown" (*A. O. Hume*). Total length, 38 inches; culmen, 7·7; wing, 21·5; tail, 8·0; tarsus, 8·2.

Adult Female.—Similar to the male, but not quite so glossy; "bill and feet red, the former lighter at the tip; orbital skin lead-colour" (*J. Scully*). Total length, about 36 inches; culmen, 7·0; wing, 21·0; tail, 8·5; tarsus, 7·6.

Young Birds.—Browner than the adults, with very little green or purplish reflections; the head and neck paler brown, with whitish spots at the ends of the feathers, the feathers of the chest also margined with whity-brown.

Range in Great Britain.—About thirteen records exist of the occurrence of the Black Stork within our limits. They are all from England, from the southern and eastern counties.

Range outside the British Islands.—The Black Stork breeds throughout the greater part of Europe. In Scandinavia it nests sparingly in Southern Sweden, being only known as a straggler to Norway. In the Mediterranean countries, with the exception of Spain, it is chiefly known as a migrant. It nests also in Palestine and Central Asia to Mongolia and Northern China, and visits the Indian Peninsula in winter, at which season it is also found in Africa, even down to the Cape Colony, where, however, it is not known to breed.

Habits.—Instead of being a friendly bird, like the White Stork, and frequenting the homes of man, the present species seeks the shelter of the forests. Mr. Seebohm says:—"It is not at all gregarious, except on migration, and is very silent, its 'klapper' being rarely heard. From all these circumstances we may infer that the Black Stork is a much more cautious bird than the White Stork, though its extreme caution does not appear to have been of much advantage to it, as it is, on the whole, a much rarer bird than its bolder relative." If one might judge from the habits of the Black Stork in confinement, its love of solitude may be induced by its contemplative nature, for I remember, a few years ago, when I visited the Zoological Gardens in Rotterdam, seeing a Black Stork perched on its nest, standing on one leg, with its beak buried in its breast, and absolutely immovable. Returning two hours later, the bird was still there, like a statue, and utterly regardless of the busy movements of the other Herons which were flying about in the big aviary, of which one of the most curious features is that, attracted by the presence of their relatives within the wires, some wild Herons have sought their proximity, and have constituted a heronry on the adjacent trees! Mr. Seebohm thus describes the taking of the eggs of this species in Pomerania :—"We found the nest of the Black Stork on a large oak, but there was no sign of a bird. Our guide assured us that it was occupied, so we concluded that the noise we had made at the Goshawk's empty nest had frightened the bird away. The tree was an old oak at least five feet in diameter for some distance from the ground, and thirty feet without a branch. Gottlieb accordingly ascended a tree close by to reconnoitre; and just as he got up to the level of the nest, to our great astonishment, off flew a Black Stork, and began to wheel round and round above the tree. She was soon joined by another, so Gottlieb descended and at once began making preparations for the ascent. We had some difficulty in throwing the line over the lowermost branch, which was dead, but very thick; at last we succeeded, and, having hauled up the rope-ladder, Gottlieb was soon on the branch. The distance to the next branch was too far to reach by sheer climbing, so the rope-ladder had to be got up another stage, and the nest was then soon reached. It was about fifty feet from the ground, on the fork of a large horizontal branch about half-way up the tree.

Nest.—"It measured from five to six feet in diameter, and was in some places two feet high, and was composed of old dead twigs, black with many years exposure. The top of the nest was almost flat, covered over with a thick layer of green moss, and in a slight depression in the middle lay three young birds, not long hatched, and one egg chipped." The Black Stork, however, does not always breed in trees, for often, in other countries, it nests in clefts or ledges of rocks and on cliffs.

Eggs.—Three to five in number; dull white, with scarcely any gloss, coarse in texture and pitted. According to Mr. Seebohm, they are smaller than those of the White Stork, though sometimes difficult to distinguish. On being held to the light, however, the colour inside is found to be green, while those of the White Stork are yellowish-white inside. Axis, 2·45–2·75 inches; diam., 1·85–2·0.

THE IBISES AND SPOON-BILLS.

SUB-ORDER PLATALEÆ.

These birds have the bridged, or "desmognathous," palate of the Herons, but they have schizorhinal nostrils, not holorhinal, as in the last named birds. Basipterygoid processes are absent, and the sternum has four notches, or clefts, in its posterior end.

The Sub-order contains two families, the *Plataleidæ*, or Spoon-bills, and the Ibises (*Ibididæ*), which are both almost cosmopolitan in their range.

THE IBISES. FAMILY IBIDIDÆ.

The Ibises are found all over the world and comprise some eighteen genera, with only one of which are we concerned in the present volume, viz., the genus *Plegadis*. In the Family *Ibididæ* are included some remarkable forms, of which the Sacred Ibis (*Ibis æthiopica*) is perhaps the best known, from its connection with ancient Egyptian lore. It is now very rarely met with in that country, but is by no means yet extinct there, as the British Museum contains specimens from Egypt. In other parts of Africa, however, it is far more plentiful, and but rarely visits Egypt in modern days, though Captain Shelley not long ago received a specimen from Damietta, and Mr. W. D. Cumming has met with the species at Fao in the Persian Gulf in October. In Madagascar occurs a distinct form, with a white eye (*I. bernieri*), and in India and China the Sacred Ibis is replaced by an allied species, *I. melanocephala*.

THE GLOSSY IBISES. GENUS PLEGADIS.

Plegadis, Kaup, Natürl. Syst. p. 82 (1829).

Type, *P. falcinellus* (Linn.).

The Ibises are divided into two sections, one with the tarsus reticulated in front, and having numerous octagonal scales, the other with the tarsus plated in front. To this latter section belongs the genus *Plegadis*, which is further distinguished by a very moderate crest, and a somewhat short tail, beyond which the feet extend, when at full length, while the toes are strong, with sharp and pointed claws, that of the middle toe being nearly straight.

Three species of Glossy Ibis are known, *P. falcinellus*, found nearly over the whole of the Old World, *P. guarauna*, mostly a South American species, which extends to the Southern United States, and *P. ridgwayi* of Peru and Bolivia.

I. THE GLOSSY IBIS. PLEGADIS FALCINELLUS.

Tantalus falcinellus, Linn. Syst. Nat. i. p. 241 (1766).
Ibis falcinellus, Macg. Br. B. iv. p. 493 (1852); Seebohm, Br. B. ii. p. 520 (1884).
Plegadis falcinellus, Dresser, B. Eur. vi. p. 335, pl. 409 (1878); B. O. U. List Br. B. p. 113 (1883); Saunders, ed. Yarr. Br. B. iv. p. 231 (1884); id. Man. Br. B. p. 379 (1889); Lilford, Col. Fig. Br. B. part xxvii. (1893); Sharpe, Cat. B. Brit. Mus. xxvi. p. 29.

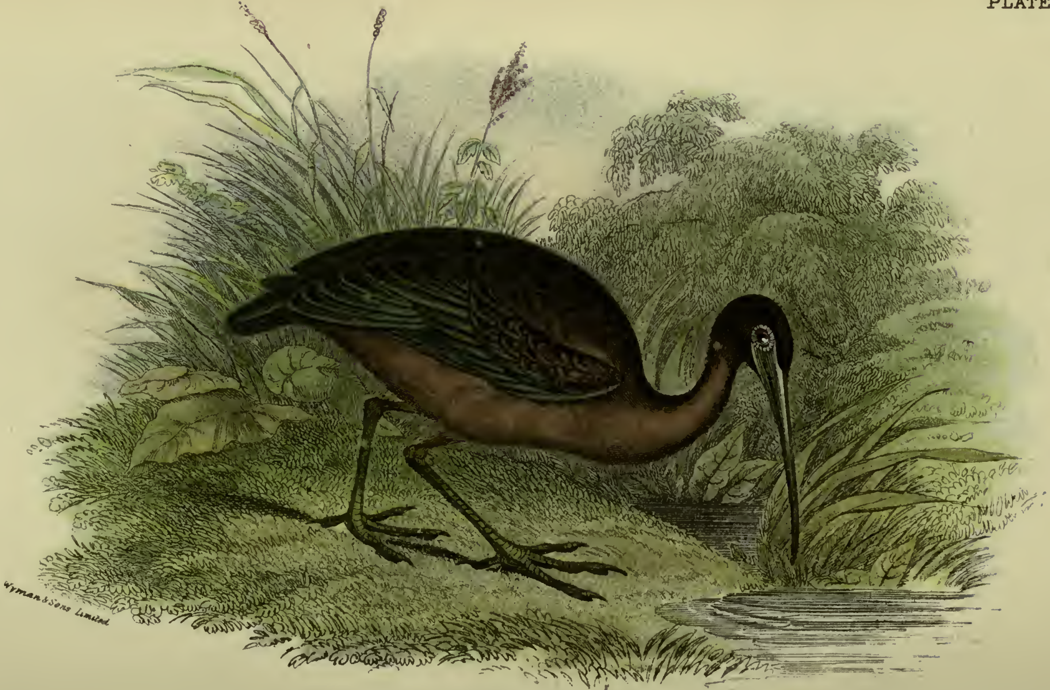
(*Plate LXXI.*)

Adult Male.—General colour above black, with glossy reflections of various shades of green or bronzy-purple; upper mantle deep maroon-chestnut, as also the lesser wing-coverts and scapulars, the latter having bronzy tips; median and greater coverts duller and more oily-green, with bronze or steel-green reflections; bastard-wing, primary-coverts, and quills entirely glossy green, the secondaries with purplish reflections; lower back, rump, upper tail-coverts, and tail black, with varying reflections of purple and oily- or bronzy-green; head and neck all round, as well as the under surface of the body, deep maroon-chestnut, somewhat lighter on the chest and breast; forehead and fore-part of crown glossy green, as also the base of the cheeks and a slight shade below the eye; under tail-coverts and under wing-coverts and axillaries black, with metallic reflections of green and purple, the quill-lining similarly glossed; bill and feet dark brownish-olive; iris brown. Total length, 22 inches; culmen, 5·2; wing, 11·2; tail, 3·9; tarsus, 4·2.

Adult Female.—Similar to the male, but a little smaller, and with a shorter bill.

PLATE LXXI.

BAILLIE'S INSTITUTION GLASGOW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GLOSSY IBIS.

Winter Plumage.—Differs from the summer plumage in losing the rufous of the head, back, and scapulars; rest of the plumage metallic as in the summer dress, but the wings rather more bronzy and the wing-coverts brighter metallic-green. The head and neck are streaked with black and whitish.

Young Birds.—Resemble the winter plumage of the adults, but are more of a metallic oil-green, without the beautiful reflections shown by the adult birds at all seasons. Head dusky-brown, with a certain amount of white striping on the head and throat, but not so much as in the winter plumage of the adults.

Range in Great Britain.—An accidental visitor in autumn or early winter, but occasionally occurring in the spring. It has been observed in Scotland and Ireland, and in England it has been met with chiefly on the eastern coasts, where it appears to have been more frequent towards the end of the last century, when it was known to the gunners of Lynn in Norfolk as the "Black Curlew." (Cf. Saunders, Man. p. 379.)

Range outside the British Islands.—Common in Southern Europe but rarer in the countries north of the Alps, and only straggling to Iceland or the Færoes, as it does to Great Britain; the same may be said of Northern Europe, where it has occurred but seldom, and only as a straggler. Its eastern range extends to Persia and Central Asia, India and China, whence it is found all over the Malayan Archipelago and Australia. It also occurs throughout Africa in localities suited to its habits, and re-occurs in the Eastern United States to Florida, but in the Southern United States, and throughout Central and the greater part of South America, it is replaced by the closely allied *P. guarauna.*

Habits.—The Ibis is a gregarious and sociable bird, feeding, nesting, and migrating in company, and sharing the breeding-haunts of the Herons, Egrets, and Pigmy Cormorants in the vast reed-swamps which are found in Slavonia and the region of the Lower Danube. "The Ibis," says Mr. Seebohm, "is a thorough Heron in its habits, and frequents the same districts, but, like the Night-Heron, it prefers the swamps and marshes to the rivers and streams. Its flight resembles that of a Heron, or perhaps more that of a Stork, for the legs droop at a slight angle from the body, and complete the curved line of the beak and extended neck. The flight is more rapid than that of either of these birds, and is performed by quicker beats of the wings, and every now and then it skims along with outspread pinions. The Ibis is very gregarious, and solitary birds or even pairs are seldom seen. Half a dozen or more birds fly in company and keep together in a wedge or string, like Cranes or Geese. On the ground the Ibis walks sedately, like a Heron. It is a very silent bird, but, when alarmed, it is said to utter a harsh croak like that of a Heron. Its food consists of worms, crustacea, small shells, aquatic insects, and frogs, for which it may often be seen searching on the low-lying coasts and on the shores of lakes and rivers, walking about something like a Curlew."

Nest.—Again I quote Mr. Seebohm :—"The Ibis builds in willows which are half under water, and makes its nest at various heights from the surface in the same trees as Common Herons, Night-Herons, Squacco Herons, Little Egrets, and Pigmy Cormorants. Sometimes one tree will contain nests of all the six species. The Great Cormorant and the Spoon-bill are not so sociable ; they each occupy a part of the forest reserved for themselves, but in the immediate neighbourhood, sometimes surrounded by the nests of the other species—a colony within a colony. The nests are made of sticks and reeds."

Eggs.—Three or four in number ; pitted and of a dark greenish-blue—a beautiful egg. Axis, 1·9–2·2 ; diam., 1·3–1·5.

THE SPOON-BILLS. FAMILY PLATALEIDÆ.

The members of this Family are easily distinguished by possessing, in addition to the osteological characters of the Ibises, a very curious development of the bill, which is long, flat, narrowed in the middle, and then widened out into a spoon-shaped, or spatulate, end. The Spoon-bills are found nearly over the entire globe, and there are three genera which are clearly recognisable. In the genera *Platalea* and *Platibis*, the head is only partially bare and the orifice of the ear is covered with plumes, whereas in the American Spoon-bill, *Ajaja ajaja*, the head is entirely bare and the orifice of the ear exposed.

Platibis, which is confined to Australia, has no crest, but has ornamental breeding-plumes on the fore-neck, while the nostrils are differently placed to those of *Platalea*, which has a crest, but no ornamental feathers on the fore-neck.

THE TRUE SPOON-BILLS. GENUS PLATALEA.

Platalea, Linn. Syst. Nat. i. p. 231 (1766).
Type, *P. leucerodia*, Linn.

A bare head and the auricular orifice covered with plumes, are the main characters of this genus, but the position of the nostrils is also peculiar, the nasal opening being an elongated oval, situated in a narrow depression, which loses itself about the commencement of the narrowest part of the bill, and is continued in a narrow sub-marginal line, which runs to the tip of the bill. In the breeding-plumage a full crest is developed, but there are no ornamental plumes on the fore-neck or breast.

Four species of Spoon-bill are known, all peculiar to the Old World. Our *P. leucerodia* of Europe is replaced in Australia and the Moluccas by *P. regia* and in Eastern Asia by *P. minor*, while in Africa a totally distinct species, *P. alba*, takes the place of the black-billed forms. *P. alba* has a red bill and legs, and is found in Africa and Madagascar.

I. THE SPOON-BILL. PLATALEA LEUCERODIA.

Platalea leucorodia, Linn. Syst. Nat. i. p. 231 (1766); Macg. Brit. B. iv. p. 503 (1852); B. O. U. List Br. B. p. 113 (1883); Seebohm, Br. B. ii. p. 514 (1884); Saunders, ed. Yarr. Brit. B. iv. p. 237 (1884); id. Man. Br. B. p. 381 (1889); Lilford, Col. Fig. Brit. B. part. xii. (1890).
Platea leucorodia, Dresser, B. Eur. vi. p. 319, pl. 407 (1873).
Platalea leucerodia, Sharpe, Cat. B. Brit. Mus. xxvi. p. 44.

(*Plate LXXII.*)

Adult Male.—Pure white above and below, including the quills and tail-feathers; a large nuchal crest of pointed and drooping plumes; on the crown and fore-neck a tinge of tawny or cinnamon-buff; bill deep slate-colour, irregularly barred with black, and having a yellow patch on the under-part; feet black; iris crimson. Total length, 38 inches; culmen, 8·1; wing, 14·9; tail, 4·7; tarsus, 5·7.

Adult Female.—Similar to the male.

Winter Plumage.—White as in the breeding-plumage, but wanting the crest of drooping plumes. Bare space before the eye flesh-colour or greenish-yellow; eyelid yellow.

Young Birds.—White all over as in the winter plumage of the adults, and equally devoid of crest-plumes; the primary-coverts and quills with black shafts, the outer primaries also blackish along the outer webs and at the tips; bill *yellow*, or, as the spring advances, pale inky-black, mottled with yellow at the tip; the bare skin of the chin yellow; feet and claws black; iris red.

Nestling.—Covered with white down, the throat and loral region bare as in old birds; bill yellow.

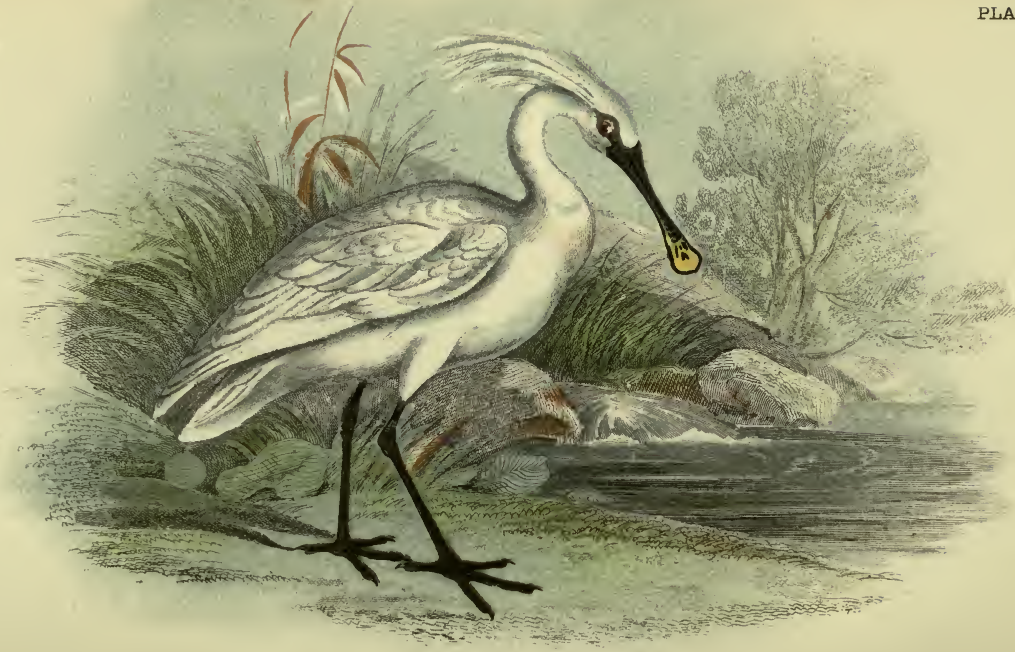
Range in Great Britain.—To the east and south of England and the south of Ireland the Spoon-bill is still an occasional visitor, but north of Yorkshire and in Scotland its occurrences have been less numerous. A Devonshire specimen from Colonel Montagu's collection is in the British Museum, as well as the bill of one which I shot in the Hoy near New Romney several years ago when collecting in company with Dr. Gordon Hogg. We were shooting some Terns, as the tide swept in, just as darkness was coming on, when a great bird hove in sight which I took to be a Gull at the time. In the failing light we could not find the place where it dropped, and the tide compelled us to retreat. A week later I found its body washed up into some reeds, and past all preserving.

In olden times, the Spoon-bill, or "Shoveler" and "Shovelard," as it was called, bred in England, not only in Norfolk and Suffolk, but, as Mr. Harting has shown, near Goodwood, and at Fulham near London. It has long been extinguished as a breeding-species with us.

Range outside the British Islands.—The Spoon-bill is everywhere

PLATE LXXII

BAILLIE'S INSTITUTION GLASGOW



SPOONBILL.

a local bird, requiring certain conditions of life not to be found in every country, and in the portions of Northern France where it used to nest, it no longer breeds, though it still does so, in a limited way, in Holland, where it is protected. It nests in Europe generally south of 56° N. lat., and especially in Spain and on the Danube, extending thence to Central Asia, India, and even to Japan, but its place in China is taken by *P. minor*. In Africa our Spoon-bill extends its range to North-eastern Africa as far as Socotra.

Habits.—To learn the ways of the Spoon-bill, a visit must be paid to the marshes which it frequents, and as the drainage of the fen-lands and meres proceeds in Holland, as it has done in the bird's haunts in England, the species is becoming more and more rare, and the opportunities of observing it more difficult. It arrives in Europe in April, the earliest seen by Colonel Irby at Gibraltar being on the 9th of that month, and eggs are taken in Southern Spain early in May. Birds have been seen, however, by Major Verner in the same country as early as the 20th of February, and they leave Northern Europe in September and migrate in the south during October.

Mr. Seebohm says that the Spoon-bill frequents open swamps and low-lying ground near the sea, rather than the centre of dense reed-beds and rush-covered marshes. It may sometimes be seen in swampy meadows, in similar localities to those which the White Stork loves to frequent. It walks about slowly and sedately, and, when alarmed, it often flies to a tall tree, where, perched perhaps on the topmost bough, it is a very conspicuous object for a great distance. It is very fond of frequenting mud-flats, searching them with its peculiar bill for food. It is rather shy, and seldom allows the observer to approach it very closely. The food of the Spoon-bill is largely composed of crustaceans, molluscs, and small insects, which it catches with its broad bill, using it in the same manner that a Duck does. To this fare is added small fish, frogs, and quantities of vegetable matter, such as the buds and leaves of water-plants, and probably grass. The Spoon-bill does not appear ever to utter any note, beyond making a sharp snapping sound with its bill.

Nest.—In India the Spoon-bill breeds in trees in company with other Herons, just as it used to do in England in days gone by, but in Europe its nests are usually found on the ground or on low trees, such as willows or alders. A visit to the Horster Meer, near Amsterdam, where the birds are protected, is described by Dr. Sclater and the late Mr. W. A. Forbes in the "Ibis" for 1877 (pp. 412-416), who recount the finding of the eggs:—"The nests were not situated so near together as those of the Cormorants, but scattered about two or three yards from each other, with thin patches of reeds growing between them. There was, however, a clear open space in the neighbourhood, formed of broken-down reeds, in which the birds were said to congregate. The Spoon-bill's nest, in the Horster Meer at least, is a mere flattened surface of broken reed, not elevated more than two or three inches above the general level of the swamp; and no other substance but reed appears to be used in its construction."

Eggs.—Four or five in number, of a dull chalky-white, with spots or streaks of reddish-brown, sometimes blotches. In some instances, too, there are only purplish underlying spots to be seen, with scarcely any overlying red blotches, while in others the underlying spots are scarcely to be distinguished. They vary considerably in size, some being long and some round. Axis, 2·55–2·95 inches; diam., 1·65–1·86.

THE CRANE-LIKE BIRDS. ORDER GRUIFORMES.

The characters for the definition of this Order are chiefly anatomical. The dorsal vertebræ are "heterocœlous" and the spinal feather-tract is not defined on the neck. The oil-gland is tufted and the young are able to move about soon after they are hatched. There are generally no notches on the posterior margin of the breast-bone, and there are no powder-down patches as in the Herons. The True Cranes are a well marked Family, but some of the allied ones, such as the Sun-Bitterns (*Eurypyges*), the Kagus (*Rhinochetes*), and the Mascarene *Mesitides*, though allied to the Cranes, show several osteological differences.

THE TRUE CRANES. SUB-ORDER GRUES.

In these birds the anterior part of the breast-bone is perforated to receive the convolutions of the trachea, as in some of the Swans. The palate is schizognathous and the nostrils are holorhinal. The tail-feathers are twelve in number. The bill is stout and of about the same length as the head itself, the lower mandible being slightly grooved. The nasal depression extends for more than half the length of the upper mandible, and the nostril is shut in by a membrane behind. The inner secondaries are rather longer than the primaries, and they are generally composed of drooping plumes, with the feathers rather loose and ornamental.

I. THE COMMON CRANE. GRUS GRUS.

Ardea grus, Linn. Syst. Nat. i. p. 234 (1766).
Grus cinerea, Meyer and Wolf, Taschenb. ii. p. 350 (1810); Macg. Brit. B. iv. p. 20 (1852); Seeb. Brit. B. ii. p. 570 (1884).
Grus communis, Bechst.; Dresser, B. Eur. vii. p. 337, pl. 505 (1873); B. O. U. List Brit. B. p. 152 (1883); Saunders, ed. Yarr. Brit. B. iii. p. 178 (1883); id. Man. Brit. B. p. 507 (1889); Lilford, Col. Fig. Brit. B. part xii. (1890).
Grus grus, Sharpe, Cat. B. Brit. Mus. xxiii. p. 250 (1894).

(*Plate LXXIII.*)

Adult Male.—General colour above dark ashy-grey; wing-coverts like the back, the greater series clearer grey and somewhat blackish towards their ends; bastard-wing black, preceded by a row of grey-coverts, preceding the primary-coverts, which are black like the primaries, and somewhat shaded with grey near the base; secondaries for the most part dark grey, more or less blackish on the outer webs and tips, the inner web lighter grey; the innermost secondaries lanceolate, slaty-grey with black tips; upper tail-coverts grey, as also the tail-feathers, the latter blackish towards the ends; crown of head and lores bare, only covered by blackish hair-like bristles; nape with a triangular patch of dark slate-colour; hind-neck white, as well as the sides of the neck, the sides of the head, and the ear-coverts as far as the eye; feathers below the eye, sides of face and throat, dark slate-colour; remainder of under surface from the lower throat downwards ashy-grey, including the under wing-coverts; bill greyish-green, inclining to red near the base; feet blackish-grey; iris reddish; eyelid reddish-brown. Total length, 36 inches; culmen, 4·7; wing, 22·0; tail, 8·0; tarsus, 9·5.

Adult Female.—Similar to the male in colour, but the ornamental secondaries not so fully developed.

Young Birds.—Similar to the adults, but having a rust-coloured head, and all the feathers edged with fulvous.

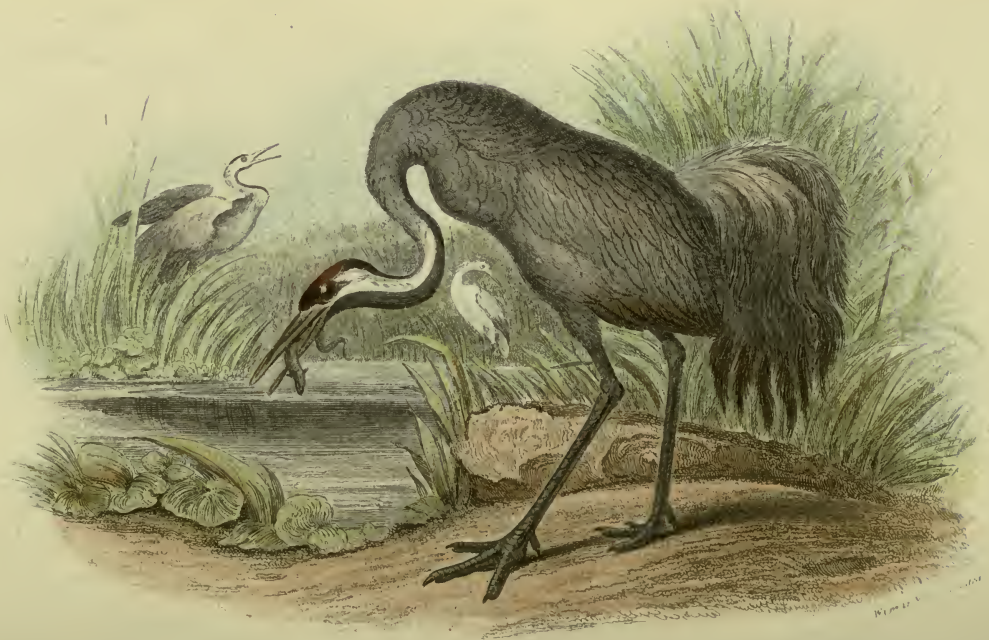
Nestling.—Covered with down of a yellowish-buff colour, of a very dense texture.

Range in Great Britain.—That the Crane formerly bred in the British Islands is undoubted, and, as Mr. Howard Saunders says, "there is evidence that until the year 1590 the species used to breed in fens and swamps of the eastern counties, whilst its visits in winter continued with regularity to a later period, though they gradually diminished." In Ireland fossil remains of the Crane have been found, and this would seem to indicate that when that country was still more 'distressful' than it is now, the Crane bred there also, in times gone by, in the swamps which its soul loves. Now it is only an accidental visitor, occurring more frequently than in other parts of Great Britain in the Orkneys and Shetland Islands. A few specimens have also been obtained in Ireland.

Range outside the British Islands.—The Crane is found in suitable localities over the greater part of Europe, where it breeds in the marshes, from Spain to Norway and Scandinavia generally, as well as in Central Europe and Russia, wherever it can find the retired morasses which it affects. In 1894 I separated the Siberian and Indian Crane as a distinct species, *Grus lilfordi*, a paler form of our Common Crane, with the ornamental secondaries light ashy-grey, instead of dark slate-colour. Mr. Blaauw, who has made these birds a special study, informs me that equally light-coloured individuals occur in Europe, and several of my friends believe that there is really no differ-

PLATE LXXIII.

BAILLIE'S INSTITUTION GLASGOW



COMMON CRANE.

ence between European and Indian examples. The series in the British Museum, however, teaches a different conclusion, and I am as yet quite unconvinced that the two species are the same, because there is a great gap in the geographical distribution of the two forms, as has been illustrated by Radakoff in his "Hand-Atlas."

Habits.—The Crane is a migratory bird to Europe, arriving in February in the south and reaching its northern breeding-home in April and May. Colonel Irby writes:—"On the 11th of March, 1874, Mr. Stark and myself had the pleasure of seeing them on passage, and a grand and extraordinary sight it was, as flock after flock passed over at a height of about two hundred yards, some in single line, and some in a V-shape, others in a Y-formation, all from time to time trumpeting loudly. We watched them for about an hour as they passed, during which time we calculated that at least four thousand must have flown by. This was early in the morning, and we were obliged to continue our journey; but when we lost sight of the Vega of Casas Viejas, over which the Cranes were passing in a due northerly direction, there appeared to be no diminution in their numbers, and, as my friend remarked, 'one would not have believed that there were so many Cranes in the whole of Europe.'"

"Unlike the Herons and the Storks," writes Mr. Seebohm, "the Crane has a loud and not unmusical voice, which can be heard at an immense distance. The keel of the sternum is hollow, and the wind-pipe is convoluted between the plates on either side; and from this long pipe, as from a trombone, proceed loud, clear, trumpet-like notes, so rapidly trilled as almost to split the ear with their vibrations. These notes can be variously modulated to express the different feelings of the bird. The Crane feeds more on vegetable than on animal food. It eats all sorts of corn, seeds, buck-wheat, peas, the tender shoots of aquatic plants, and even grass; but it often devours worms, insects of various kinds, and even lizards and small frogs, but it is not known to eat fish."

Nest.—To again quote Colonel Irby, the "nests vary much in size, some being quite five feet across, others perhaps not more than eighteen inches; some are deep, and stand high up; others are almost level with the water, in which they are always built. The nest is always placed among sedges or rushes, sufficiently short for the bird, when standing up, to be able to see around, and is never built in tall reeds. It is very easy to find, as the old birds never fly direct to the nest, but alight some twenty or thirty yards away, and, walking up to it, form regular tracks like a cattle-path, so, by following one of these tracks, one may be sure of finding the nest; nor do the old birds fly straight away from it, but walk off quietly to the end of one of these paths and then take wing. When approached while sitting on the nest, the bird slips off, crouches down, and runs away for some yards."

Eggs.—Two in number, very rarely three; of a coffee-brown to a stony-grey as regards the ground-colour. The eggs are double-spotted, the underlying spots being dull purplish-grey, while the overlying ones take the form of brown or reddish smudges and spots, generally distributed over the egg, but more often collected round the thicker end. Axis, 3·55–4·3; diam., 2·3–2·5.

THE DEMOISELLE CRANES. GENUS ANTHROPOIDES.

Anthropoides, Vieill. Analyse, p. 50 (1816).

Type, *A. virgo* (Linn.).

Unlike the True Cranes, the Demoiselle has a feathered head, with a long tuft of silky plumes on the ear-coverts, and the plumes of the lower throat are ornamental, elongated, and lanceolate.

Only one species of the genus, *A. virgo*, is known, extending from Southern Europe to Central Asia, and thence to Northern China, and wintering in Northern and North-eastern Africa as well as in North-western India. It has been observed once only in Great Britain, when one of a pair was shot in the Orkneys in May, 1863. As, however, the species is one which is constantly kept in menageries, these may have been escaped individuals. The same must have been actually the case with the Crowned Crane (*Balearica pavonina*), which was shot in Ayrshire on Sunday, September 17th, 1871. This species is also one which is often kept in confinement.

THE BUSTARDS AND PLOVERS.

ORDER CHARADRIIFORMES.

In this Order are found the Plovers, Sheath-bills (*Chionis*), Seed-Snipes (*Attagis*), Jacanas (*Parræ*), Bustards, and Thick-knees. The palate is throughout schizognathous, but the nostrils differ, being mostly schizorhinal, except in a few forms, where they are holorhinal. Next in order to the Cranes come the Bustards and the Thick-knees, the latter being Bustard-like Plovers, and forming the connecting link with the True Plovers.

THE BUSTARDS. SUB-ORDER OTIDES.

Besides the schizognathous palate, which is found in the whole Order *Charadriiformes*, the Bustards differ from the bulk of the Plover-like birds in having holorhinal nostrils. The dorsal vertebræ are heterocælous, and there are other osteological characters which are detailed in various works on the classification of birds, but on these I need not dilate further, as they are not necessary to an understanding of what a Bustard is. In form, in plumage, and in external character the birds are so peculiar as to be easily recognisable, if, indeed, anyone is so fortunate as to shoot a Bustard in the present day, for the Great Bustard has become extinct with us, and the other two species on the British List, the Little Bustard and Macqueen's Bustard, are only rare visitants.

The Bustards are birds of the Old World only, and are distributed over the whole of it in localities suited to their habits. They do not extend, however, very far to the north. Some dozen genera are admitted by zoologists, and of these three find place among our British birds.

THE TRUE BUSTARDS. GENUS OTIS.

Otis, Linn. Syst. Nat. i. p. 264 (1766).

Type, *O. tarda*, Linn.

In former times there were probably many more species of Bustards in Europe than exist at the present moment, for remains of an extinct species have been described by Mr.

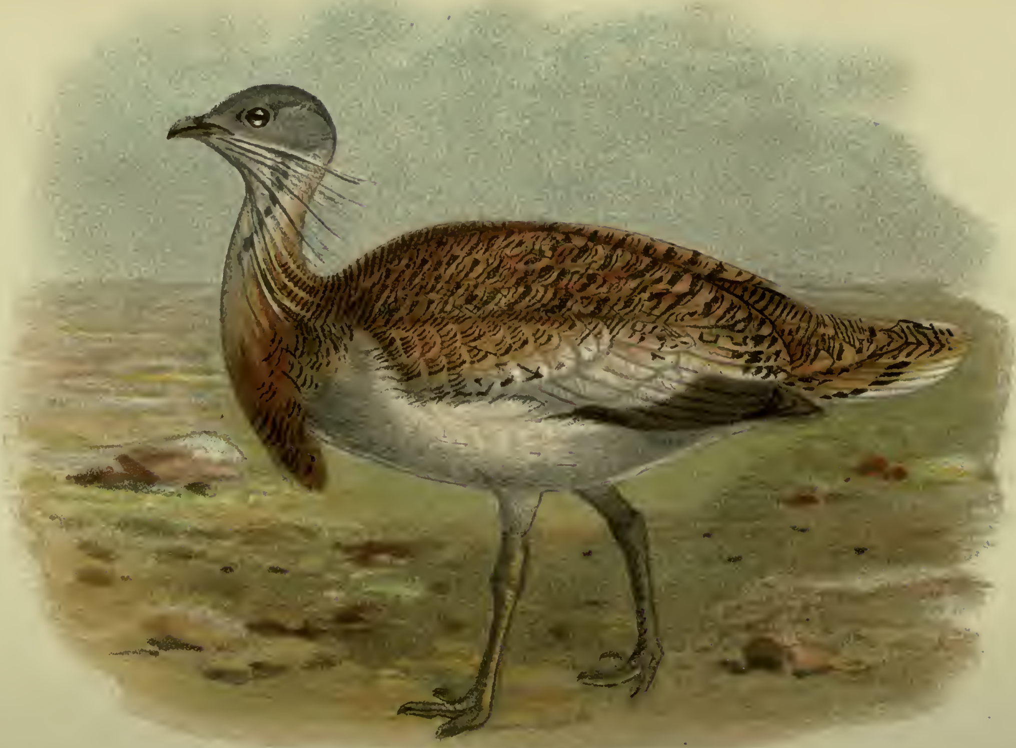
Lydekker from the Miocene of Bavaria. At present only two representatives of the genus *Otis* are known, one being the *Otis tarda* of Europe and Western Asia, which is replaced by *O. dybowskii* in Eastern Siberia and China. All the Bustards have a wavy or freckled plumage, and some of them have a largely developed shield of feathers over the crop, composed of the elongated plumes of the lower throat and fore-neck. To this section belongs Macqueen's Bustard, mentioned later. The True Bustards, however, have no such appendage, though the crop is of a bright chestnut-colour, and is capable of being distended to an enormous extent, when the bird "shows off" during the breeding season. The "Great" Bustard is so called in contrast to the "Little" Bustard (*Tetrax tetrax*), but it is by no means the largest of the Family, as there are several species which exceed *Otis tarda* in size. In the genus *Otis* there is no crest on the nape or hind-neck, but no other genus possesses the curious whisker-like plumes on the cheeks, which are so prominent an ornament in *O. tarda* and its Asiatic ally.

I. THE GREAT BUSTARD. OTIS TARDA.

Otis tarda, Linn. Syst. Nat. i. p. 264 (1766); Macg. Brit. B. iv. p. 30 (1852); Dresser, B. Eur. vii. p. 369, pl. 508 (1872); B. O. U. List Br. B. p. 153 (1883); Saunders, ed. Yarr. Brit. B. iii. p. 193 (1884); Seebohm, Brit B. ii. p. 581 (1884); Saunders, Man. Brit. B. p. 509 (1889); Lilford, Col. Fig. Brit. B. part xxi. (1892); Sharpe, Cat. B. Brit. Mus. xxxiii. p. 285 (1894).

(*Plate LXXIV.*)

Adult Male.—General colour above sandy-rufous, with broad transverse bands of black, especially on the back and scapulars; the upper tail-coverts and tail similarly banded, but of a lighter and more vinous-chestnut tint; tail-feathers tipped with white, the outer ones white at the base, and the three outermost almost entirely white, with a broad sub-terminal band of black; lesser wing-coverts like the back, with somewhat wider black bars; median and greater coverts, bastard-wing, and primary-coverts white, powdered with grey towards their ends; quills brown, with white bases; the primaries white-shafted, and blackish at the tip and on the outer web; second-



GREAT BUSTARD.

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aries blackish, the bases white, this increasing in extent towards the inner secondaries, on which the black tip gradually disappears, so that the inner ones are quite white, the innermost ones being like the back; crown light grey, tinged with rufous towards the hind-neck, which is barred across with black; sides of face, ear-coverts, cheeks, and throat light grey, with elongated bristle-like feathers on each side of the chin; lower throat and fore-neck orange-chestnut, forming a band across the fore-neck, which is washed with light grey, the sides of the neck with numerous small bars of black; sides of upper breast sandy-rufous, barred with black; rest of under surface of body pure white; bill leaden-grey, the tip horn-black; feet earthy-brown, the nails horny-black; iris dark brown; eyelid white. Total length, 42 inches; culmen, 2·1; wing, 23·5; tail, 10·0; tarsus, 6·0.

Adult Female.—Coloured like the male, but much smaller. The grey on the throat extends farther down, the sides of the neck being rufous with a few black bands, the rufous-colour descending on to the sides of the fore-neck. There are no ornamental bristly plumes on the cheeks. Total length, 30 inches; culmen, 2·1; wing, 19·5; tail, 8·5; tarsus, 5·3.

Young Birds.—Resemble the old female, but are paler and more freckled with dusky-brown bars on the wing-coverts, as well as on the white secondaries, which have a large dark subterminal bar. The crown is like the back, being blackish, blotched with sandy-buff markings, and the hind-neck is greyish; the sides of the face and throat greyish-white, as also a broad eyebrow; lower throat and fore-neck sandy-buff, freckled with dusky cross-markings; sides of fore-neck sandy-rufous, with distinct black cross-bars.

Range in Great Britain.—According to Mr. Howard Saunders (Man. p. 509), "until the year 1526 the Great Bustard used to breed, sparingly, as far north as the flat portion of the Lowlands, on the Scottish side of the Border; and southward it was common on the moors, extensive downs and plains of England, to the Channel. Enclosure, the planting of trees, and the increase of population contributed to the gradual diminution of its numbers, and it passed away, unrecorded, from Berkshire, Hertfordshire, Cambridgeshire, the wolds of

Lincolnshire, and the downs of Sussex, while the first ten years of this century saw the extinction of the birds indigenous to Salisbury Plain. On the eastern wolds of Yorkshire the survivor of former droves was trapped in 1832-33; and in Norfolk and Suffolk the last fertile eggs were taken about 1838, though a few birds lingered to a somewhat later date." Such is the epitome of the history of the extinction of this interesting bird, and now only an occasional visitor comes over to Britain, though sometimes several individuals are noticed, as was the case in 1870-71, when it is supposed that the Franco-German War and the consequent cannonading drove the birds from their usually quiet haunts. Again an influx took place in 1879-80, when the species invaded Central and Northern France.

Range outside the British Islands.—The Great Bustard is now rare in Denmark and Southern Sweden, where it used to breed, but is at present confined to Central and Southern Europe, being found in Hungary, certain parts of Germany and Poland, while it is by no means a rare bird in Spain. Eastwards it extends to Turkestan and Northern Afghanistan, and it occasionally wanders into the extreme north-west of the Indian Peninsula. In Siberia and China, *O. tarda* is replaced by *O. dybowskii*.

Habits.—When I was in Hungary, I was very anxious to see the Great Bustard, but, though we passed through country inhabited by the birds, I was told that they were then difficult to observe, as they hid themselves in the fields of waving corn and were not to be seen flying. As this was in May, when Mr. Howard Saunders says that they moult their quills and are unable to fly, there is little wonder that I did not succeed in seeing one on the wing.

The food of the Great Bustard consists, besides occasional worms, lizards, and small rodents, of green food, such as corn and peas, and Dr. Aitchison records his finding in the crop of an old male bird shot in Northern Afghanistan a ball of grass, while the odour of the bird was such that it was with great difficulty he could be prevailed upon to preserve it. The flesh of the females and young birds is, however, highly esteemed.

The males make a great show in the breeding-season, and fight for the possession of the hens. A cock Bustard, at all times a fine-looking bird, becomes an extraordinary object when in love, and betrays one of the most remarkable figures to be met with in nature. His "show-off" is somewhat as follows: Standing before the female, he beats his feet on the ground, and begins by shaking his wings. He then turns his tail flat upon his back, crosses his long primary-quills, so that the ends protrude cross-wise over it, shakes up his scapulars and covers the quills so that nothing of them remains in sight. The white under tail-coverts are then brought up, so as to form a frill behind him. Then his wing-coverts are gradually turned forwards, and the four white inner secondaries are erected on each side of the back, while he buries his head in his neck, thereby causing his whiskers to stand erect on each side; and then by means of the air-pouch under his tongue, he inflates his neck and throat to a prodigious extent, his chestnut crop being in full evidence. The long parapteral feathers, which are really wing-coverts, share in the everting process of the latter, and are thrown forward, so as to show the elegant white plumes raised over each side of the back. That *white* is evidently a considerable attraction to the female, is shown by the fact that the bird constantly varies the display by springing suddenly round and exhibiting his other side to the female, where there are the white under tail-coverts for her to admire. In the Natural History Museum is an admirably mounted group of Bustards, executed by Mr. Pickhardt, and showing the results of his studies of the species in the Zoological Gardens, where this year (1895) the female Bustard laid eggs.

Nest.—None; a mere hollow scraped in the ground.

Eggs.—Two or three in number. Generally olive-brown, double spotted, the underlying spots and blotches being faint purplish-grey, with similar overlying markings of light olive or brown. Axis, 2·7–3·25 inches; diam., 2·1–2·35.

THE LESSER BUSTARDS. GENUS TETRAX.

Tetrax, Leach, Syst. Cat. Mamm. &c. Brit. Mus. p. 28 (1816).

Type, *T. tetrax* (Linn.).

In this genus, which consists of one small species, there are no ornamental whisker-like plumes, but on the nape is a full crest of elongated feathers. The tarsus is very short.

I. THE LITTLE BUSTARD. TETRAX TETRAX.

Otis tetrax, Linn. Syst. Nat. i. p. 264 (1766); Macg. Brit. B. iv. p. 35 (1852); Dresser, B. Eur. vii. p. 382, pl. 509 (1872); B. O. U. List Brit. B. p. 154 (1883); Seebohm, Brit. B. iii. p. 587 (1884); Saunders, ed. Yarr. Brit. B. iii. p. 216 (1883); id. Man. Brit. B. p. 511 (1889); Lilford, Col. Fig. Brit. B. part xxiv. (1893).

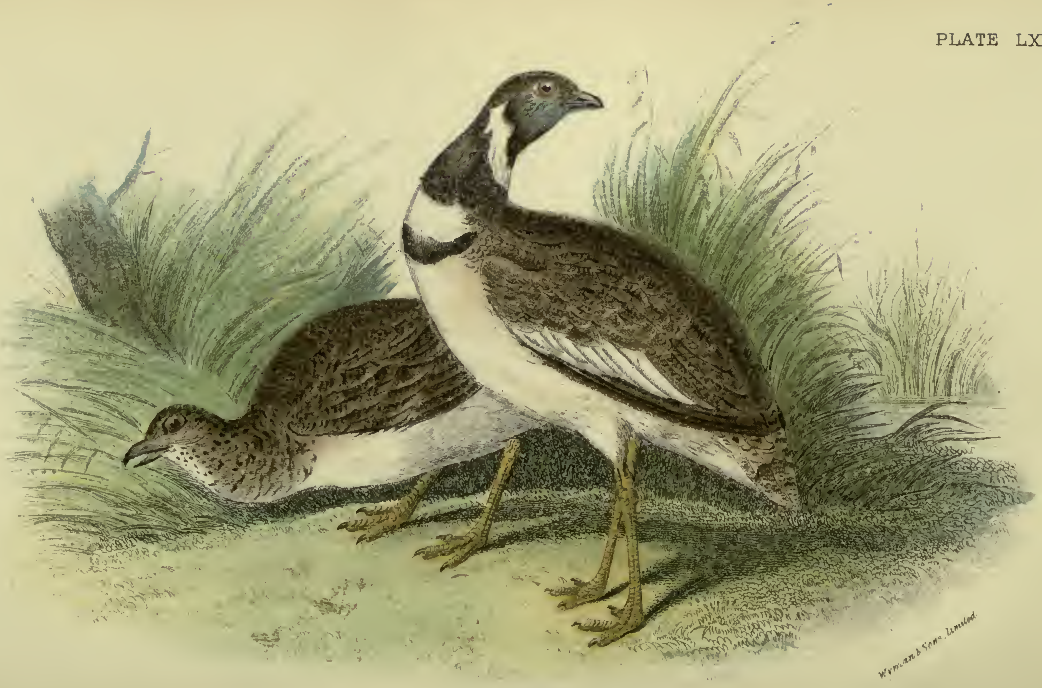
Tetrax tetrax, Sharpe, Cat. B. Brit. Mus. xxiii. p. 289 (1894).

(*Plate LXXV.*)

Adult Male.—Sandy-buff, vermiculated and blotched with black; quills white, blackish towards their ends, and white at the tips; the outer primaries blackish, with white bases, the white gradually increasing towards the secondaries, which are almost entirely white with an occasional spot of black, the innermost secondaries like the back; tail with four black bars, the basal half white, the outer feathers broadly tipped with creamy-white; crown of head, nape, and hind-neck brown, mottled with streaks and edges of sandy-buff, with which a few blue-grey feathers are intermixed; lores and sides of crown pale sandy-buff, streaked with dark brown; feathers above and round the eye uniform creamy-buff; sides of face, ear-coverts, cheeks, and throat light bluish-grey, bordered by a broad band of black, which extends from the sides of the hind-neck diagonally across the latter, and unites in a broad band which runs down the centre of the lower throat; round the hind-neck, and occupying the sides of the latter, is a broad patch of black, uniting on the upper fore-neck; this is bordered above by a broad band of white which encircles the hind-neck, separates the black on the sides of the neck, and descending on the latter to the lower throat, unites there in a point; across the lower fore-neck is a broad band of black which is separated from the lower throat by a band of white, which traverses the fore-neck also; remainder of under surface of body pure white; bill horn-grey, black at the tip, dull yellowish at the base of the lower mandible; feet dull ochre-yellow; iris yellowish. Total length, 17 inches; culmen, 1·5; wing, 9·4; tail, 3·7; tarsus, 2·4.

PLATE LXXV.

BAILLIE'S INSTITUTION GLASGOW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LITTLE BUSTARD.

Adult Female.—Without the varied markings of the male, but scarcely differing in size. Rather lighter and more coarsely mottled with black than the male; the hind-neck and mantle, as well as parts of the scapulars and back, spangled with ovate drops of sandy-buff, most of these drops having a twin-spot of black in the centre; sides of face sandy-rufous, streaked with black; throat white; lower throat, fore-neck, and upper breast sandy-buff, the former streaked with black, and the fore-neck and chest with circular bars and spots of black; remainder of under surface pure white, as also the under wing-coverts; the lower primary-coverts with cross-bars of black; wings as in the male, but the exterior coverts and the greater series barred with black. Total length, 17 inches; culmen, 1·1; wing, 9·7; tail, 4·0; tarsus, 2·4.

Young Birds.—These can generally be distinguished from the adult female by the greater amount of barring on the chest, by the more profuse barring of the white upper tail-coverts, and by the sandy frecklings of the primary-coverts; iris brownish-yellow.

Range in Great Britain.—Although a few instances of the occurrence of the Little Bustard in full breeding-dress have been recorded from our islands, the greater number of specimens have been captured in autumn and winter, chiefly in the southern and eastern counties. Four have been recorded from Scotland and two from Ireland.

Range outside the British Islands.—The Little Bustard is a migratory bird in most parts of Europe, and breeds only in the open country suited to its habits. Thus it is plentiful in certain parts of France, Spain, and Russia, but it does not go very far north, though known as a straggler to Scandinavia, the Baltic Provinces, and the neighbourhood of St. Petersburg. Eastward it ranges to Turkestan, whence it visits North-western India in the cold season, at which time it is also found in North-eastern Africa.

Habits.—As a rule, the present species is a very shy bird and one difficult to procure, though it is often seen in flocks of a hundred or more at certain seasons. Colonel Irby writes:—"I found the Little Bustard equally common in Marocco and Andalucia on all open, low, cultivated ground. On the dead level, or vega, of the Barbate near Casas Viejas at times, in early autumn, they positively swarmed in flocks sometimes of as many, or more, than a hundred together, frequenting this flat ground till it was swamped by the rains. They then resorted to higher and more undulating ground, and these large flocks dispersed and broke up into lots of from five to six or twenty in number. . . . Unlike the Great Bustard, they usually rose high up at once, and their power and rapidity of flight is astonishing for their size and weight. They were often seen flying somewhat like Golden Plover, twirling and twisting about at a great elevation; and sometimes I watched them rise and go to such a height that it would have been difficult to tell what birds they were unless I had seen them fly up from the ground. . . . The Moorish names (Sáf-sáf or Sirt-sirt) are significant of the rattling noise which the Little Bustard makes in rising, and, when the flock is large, this can be heard a long way off. There is none of this sound of the wings in the rising of the slow-flying Great Bustard. . . . The male Little Bustard in the breeding-season has a most peculiar call, which can be easily imitated by pouting out the lips tight together and then blowing through them. The birds, when thus calling, seem to be close to one, but are often in reality half a mile off. They must possess powers of ventriloquism, as I have often imagined that they were quite near to me, but upon hunting the spot with a dog I found no signs of them anywhere near. Indeed, at that season, it is sometimes as difficult to make them rise as a Land-Rail." Mr. Howard Saunders says that the male assumes his breeding-plumage in April, at which time he selects a spot about three feet in diameter, on which he passes several hours each day, with head and neck thrown back, wings somewhat extended, and tail erect, pouring forth his peculiar cry of *prut*, *prut*, jumping up at the conclusion of each call, and striking the ground in a peculiar manner on his descent. At this season, Mr. Abel Chapman found that the throat was much dilated (Man. p. 512). The food of the species is varied, and while chiefly consisting of grass and grain, also comprises frogs, small rodents, and insects.

Nest.—On the ground, a small depression being lined with dry grass.

Eggs.—Three or four in number; olive-brown to olive-green, or stone-colour in tint, the markings being very inconspicuous, so that the general aspect of the egg is uniform. The underlying markings are dusky and scarcely distinguishable, while the overlying ones are obscure olive or reddish-brown. Axis, 1·95–2·25; diam., 1·5–1·6.

THE RUFFED BUSTARDS. GENUS HOUBARA.

Houbara, Bp. Saggio Met. Ucc. Europ. p. 144 (1831).
Type, *H. undulata* (Jacq.).

The Ruffed Bustards belong to the section of the Family which have an overhanging shield of feathers on the crop. In the genus *Houbara* the crown has an erectile crest of narrow feathers, and on the sides of the neck is a large ruff of soft feathery plumes. The tarsus is very short.

Two species of Ruffed Bustard are known, Macqueen's Bustard of the British list, and the Mediterranean Ruffed Bustard (*H. undulata*), the ranges of which are given below.

I. MACQUEEN'S BUSTARD. HOUBARA MACQUEENII.

Otis macqueeni, J. E. Gray; Dresser, B. Eur. vii. p. 395, pl. 511 (1876); Seebohm, Brit. B. ii. p. 591 (1884); Saunders, ed. Yarr. Brit. B. iii. p. 221 (1884); id. Man. Brit. B. p. 153 (1889).

Houbara macqueenii, B. O. U. List Brit. B. p. 154 (1883); Sharpe, Cat. B. Brit. Mus. xxiii. p. 318 (1894).

Adult Male.—Freckled above with sandy and blackish, like other Bustards, but easily distinguished by its facial characters and ruff. The crown of the head is sandy-brown in colour, minutely freckled with blackish, and ornamented in the centre with a crest of a few elongated feathers, which are white tipped with black; the occiput and nape greyish-white, with dusky frecklings; the hind-neck covered with down of a sandy-buff colour; on the sides of the crown a lateral crest of white, slightly freckled on the feathers over the eye; lores and feathers round the eye white, with elongated black hair-like shafts to the feathers; the sides of the face and ear-coverts pale sandy-buff, with the same blackish shafts; cheeks white, the fore-part streaked with black shafts; chin and upper throat white; sides of neck black, commencing in a streak close behind the ear-coverts and extending into a ruff of stiffened feathers, the basal plumes black, the succeeding ones white, with broad black tips, succeeded by a tuft of feathery white plumes; lower throat and fore-neck bluish-grey, the former obscured by sandy-buff, slightly freckled with black; the plumes of the fore-neck elongated and bluish-grey, with white tips; remainder of under surface of body white, with some freckled feathers on the sides of the upper breast, and some black cross-bars on the under tail-coverts, all of the latter plumes with a concealed tinge of pink at the base; under wing-coverts and axillaries pure white; bill bluish or dusky above, paler, usually greenish or yellowish, on the gape and lower mandible; feet pale yellow, never clean and bright, mostly with a dingy greenish or plumbeous tinge, at times creamy; iris varying from pale to bright yellow. Total length, 28 inches; culmen, 1·8; wing, 15·7; tail, 9·5; tarsus, 4·9.

Adult Female.—Smaller than the male, with the crest and ruff less developed, the freckling on the lower throat and fore-neck rather coarser. Total length, 23 inches; culmen, 1·65; wing, 16·0; tail, 7·0; tarsus, 3·7.

Young Birds.—Resemble the old female, but always to be distinguished by the arrow-head markings of sandy-buff on the upper surface. The grey on the fore-neck is obscured by sandy frecklings, and the white primaries are deeply tinged with sandy-buff. The frill is always much smaller, and only a few elongated feathers represent the crest of the adults, these plumes being coarsely freckled with black.

Range in Great Britain.—One of our rarest visitors, only two examples being known to have occurred within our limits, one having been killed near Kirton-in-Lindsey in Lincolnshire in October, 1847, and another near Redcar in October, 1892.

Range outside the British Islands.—The breeding-place of Macqueen's Bustard appears to be the steppes of Central Asia as far east as the Altai Mountains and the Baikal district. In winter it is found in great abundance in North-western India and Sind, and it also winters in Persia and Baluchistan, as far as the Caspian Sea. It has been killed in many parts of Central Europe, but rarely reaches the countries of Northern Europe. Its ally, the Arabian Ruffed Bustard (*Houbara undulata*), occurs in the countries of the Mediterranean, eastwards to Armenia and westwards to the Canaries, the Bustards of Fuerteventura having been lately considered to be a distinct species, which has been described as *O. fuerteventuræ* by the Hon. Walter Rothschild and Mr. E. Hartert.

H. undulata has a white crest, and the fore-neck and chest are white like the rest of the under surface of the body.

Habits.—The best account of the habits of the present species is that published by Mr. A. O. Hume in the "Game Birds of India," from which I make the following extracts:—"I have never heard this bird utter any sound, either when feeding undisturbed, or when suddenly flushed, or when wounded and seized, or about to be seized, by man or dog. Possibly during the breeding-season the males have some call.

"By preference, the Houbara affects the nearly level, though slightly undulating, sandy semi-desert plains, which constitute so important a feature in the physical geography of Western India. Plains, semi-desert indeed, but yet affording in places thin patches, in places a continuous area, of low scrubby cover, in which the dwarf Zizyphus (the Ber), the Lana (*Anabasis multiflora*), the Booee (*Ærna booii*), various Salsolas, stunted acacia-bushes, and odorous tufts of lemon-grass are conspicuous.

"Here the Houbara trots about early and late, squatting under the shade of some bush, during the sunniest hours of the day, feeding very largely on the small fruit of the Ber, or the berries of the *Grewia*, or the young shoots of the lemon-grass, and other herbs; now picking up an ant or two, now a grasshopper or beetle, and now a tiny land-shell or stone, but living chiefly as a vegetarian, and never with us, to judge from the hundreds I have examined, feeding on lizards, snakes, and the like, as the Great Bustard certainly does, and the African Houbara is said to do.

"The Houbara greatly prefers running to flying, and when the weather is not too hot, will make its way through the labyrinth of little bushes which constitute its home at a really surprising pace. So long as the cover is low, its neck and body are held as low as possible, but as soon as it gets where it thinks it cannot be seen, it pulls up, and, raising its head as high as possible, takes a good look at its pursuers. Not unfrequently it then concludes to squat, and though you may have been, unobserved, watching it carefully, whilst *it* was only watching others of the party coming from an opposite direction, it becomes absolutely invisible the moment it settles down at the foot of a bush or stone. Once it has thus settled, especially if it is hot and about noon, you may walk past it within ten yards without flushing it, if you walk carelessly and keep looking in another direction.

"But it is weary work trudging on foot, under an Indian sun, after birds that run as these can and will, and in the districts where they are plentiful, people always either hawk them or shoot them from camels.

"Off a camel, a large bag is easily made, and as, whilst after these Bustards, you get from time to time shots at Antelope or Ravine-Deer, Quail, Partridges, and, on rare occasions, a Great Bustard also, it is not bad fun, though rather monotonous, like the scenery that surrounds one.

"In some parts of the country, the Houbara greatly affect fields of mustard and other crops yielding the oil-seeds of commerce, of which there is a vast variety, known by half a dozen different names, in almost every province.

"I have occasionally seen them in wheat, barley, and other grain fields, but only when these were young and tender."

Nest.—None.

Eggs.—Two or three in number ; clay-brown or olive-brown in colour, with faint underlying spots and blotches of purplish-grey, the overlying spots being dark brown and generally somewhat longitudinal in shape. Axis, 2·2–2·55 inches ; diam., 1·6–1 8.

THE THICK-KNEES. SUB-ORDER ŒDICNEMI.

The Thick-knees, or Stone-Curlews, form an intermediate group between the Bustards and the Plovers, and they have been called before now Thick-kneed Bustards, as well as Norfolk "Plovers." Stone-"Curlew" is not a good name for these birds, as they have little to do with the True Curlews

PLATE LXXVI.

INSTITUTION
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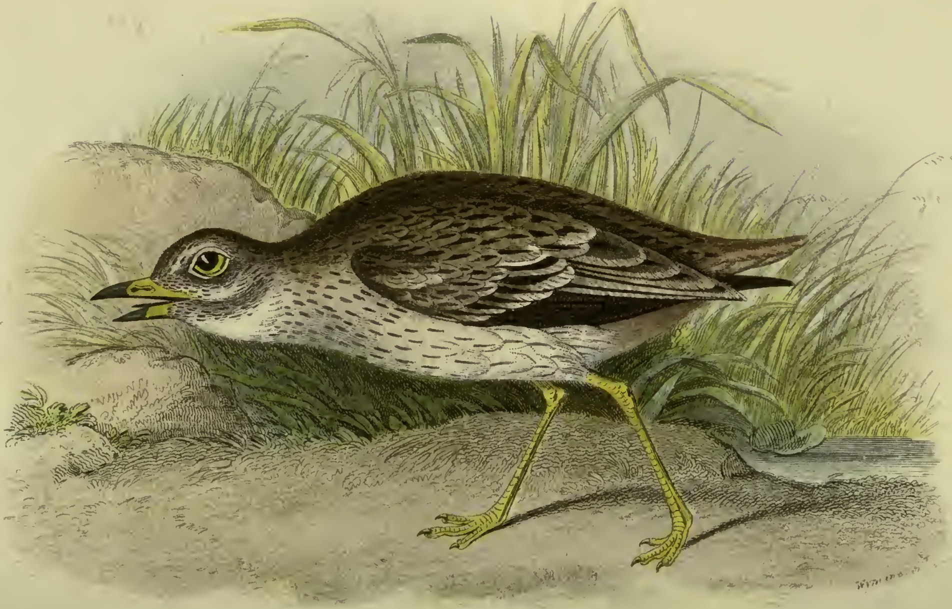


STONE-CURLEW.

(*Numenius*), but they are generally known by this title, and so I retain it.

Like the Bustards, the Thick-knees have a schizorhinal palate and holorhinal nostril, and share with them another point, viz., the absence of the hind-toe, or hallux. There are, however, many anatomical characters in which the two groups differ, and in many of these the Thick-knees show relationship with the Plovers. In habits they are Bustard-like in many respects, but their eggs are more like those of the Plovers, and they never make any nest.

There are four genera of Thick-knees, of which *Burhinus*, *Esacus*, and *Orthorhamphus* are Indian and Australian, while the genus *Œdicnemus* is found all over the temperate parts of the Palæarctic Region, and extends throughout Africa, India, and the Burmese countries. It is also found in America from Mexico to Amazonia and Peru.

THE TRUE THICK-KNEES. GENUS ŒDICNEMUS.

Œdicnemus, Temm. Man. d'Orn. p. 321 (1815).

Type, *Œ. œdicnemus* (Linn.).

I. THE STONE-CURLEW. ŒDICNEMUS ŒDICNEMUS.

Charadrius œdicnemus, Linn. Syst. Nat. i. p. 255 (1766).
Œdicnemus crepitans, Macgill. Brit. B. iv. p. 77 (1852); Seeb. Br. B. ii. p. 696; pl. xxi. figs. 6, 7 (1884).
Œdicnemus scolopax, Dresser, B. Eur. vii. p. 401, pl. 512 (1876); B. O. U. List Br. B. p. 155 (1883); Saunders, ed. Yarr. Br. B. iii. p. 225 (1884); Saunders, Man. Brit. B. p. 515 (1889); Lilford, Col. Fig. Brit. B. part xxxi. (1895).
Œdicnemus œdicnemus, Sharpe, Cat. B. Brit. Mus. xxiv. p. 6.

(*Plate LXXVI.*)

Adult Male.—General colour above sandy-buff, with blackish centres to the feathers; lesser wing-coverts a little more tawny, with broad black streaks; median coverts greyish, mesially streaked with black, tipped also with black, before which is a broad sub-terminal bar of white; greater coverts white, ashy at the base, and with a broad sub-terminal bar of black; primary-coverts and quills blackish, with white spots on the middle of the latter, the inner secondaries elongated and tinged with tawny; crown of head like the back, but with narrower black stripes; lores, eyebrow, and a band below the eye white, extending across the ear-coverts, the upper margin of which is blackish-brown continued into a black line underneath the eye and ending in front of the latter; cheeks and throat white; lower throat and fore-neck tawny-buff, streaked with black, these streaks becoming narrower on the breast and sides of the body, which are paler tawny-buff; breast, abdomen, and thighs white; under tail-coverts tawny; under wing-coverts and axillaries white; bill greenish-yellow, black at the point; feet yellow; iris very large and golden-yellow. Total length, 16 inches; culmen, 1·6; wing, 9·35; tail, 4·7; tarsus, 3·1.

Adult Female.—Similar to the male in colour. Total length, 16 inches; culmen, 1·65; wing, 9·5; tail, 4·9; tarsus, 2·75.

Young Birds.—Very similar to the adults, but distinguished by the colour of the wing-coverts, which are dusky-blackish at the base, with broad white ends. In the old birds the bases of these coverts are white, and the tips are white with a broad sub-terminal bar of black. The general colour of the young birds is more tawny than the adults.

Nestling.—Entirely clothed in sandy-coloured down, paler on the throat and abdomen, and streaked with bands and lines of black, distributed over the body in regular patterns.

Range in Great Britain.—To most parts of England the Stone-Curlew is only a summer visitor, arriving in April and leaving in October, but a certain number pass the winter in the south of Devonshire and Cornwall. It has been found breeding in the southern and eastern counties, as well as in the midlands, but becomes rare to the north of Yorkshire, and only one instance of its occurrence in Scotland is known, while Ireland has received but a few visits. In Wales, also, it is almost unknown.

Range outside the British Islands.—An inhabitant of the temperate portion of Europe, visiting Northern Germany in summer, and straggling occasionally into Denmark. In the Mediterranean countries it is mostly resident, but an immigration takes place in the winter, when the Thick-knee visits North-eastern Africa down to the latitude of Aden. Eastwards the species extends to Central Asia and the Altai district, wintering in India and the Burmese provinces. The Indian birds have been separated as a distinct race, as the generality of specimens are smaller, while the third primary has a white spot. This is a character which is found in some European specimens, and no line of difference can be drawn between European and Asiatic examples.

Habits.—Open spaces, heaths, and wolds are the natural habitat of the Thick-knee, which is a particularly shy and timid bird. The bare parts of the eastern counties and our southern downs, the wilds of Salisbury Plain, and the wide extent of shingly beach on the coast of Kent—all these are favourite resorts of the species in England, and it is in these localities it breeds. Sometimes a single pair will be found inhabiting a wide extent of the Hampshire Downs, while on Salisbury Plain several pairs will be encountered in the space of a single day. I have kept several of these birds in confinement, and allowed them the run of a garden, but they are always timid, and never become very tame. When pursued, they have the curious habit of running along for some distance with their necks outstretched, and then lying down with extended neck, evidently trusting to the similarity of their plumage to their barren surroundings for concealment. They will lie thus and allow themselves to be taken by the hand. The note is musical when the bird is flying in the air, calling to his mate, but changes to a note of terror when a Peregrine comes in sight, and I have seen several captured by trained Hawks. Thick-knees are, as a rule, more active in the evening, and are rather silent birds during the day. They will eat almost anything, from a field-mouse or a frog to a worm or an insect, though beetles constitute a large proportion of their food. I have known a young one to be brought up largely on meat, and slices off the breast of a freshly-killed Sparrow were swallowed with avidity.

Nest.—None, the eggs being deposited on the bare earth in a shallow depression. They so closely resemble their surroundings that they can easily be mistaken for the stones, of which there are generally plenty on the fallow ground selected by the bird for the deposition of its eggs. They are thus extremely difficult to find, the more so as the female generally runs away from the eggs for a considerable distance before taking wing.

Mr. Robert Read writes to me:—"A few pairs of the Stone-Curlew still nest on the vast stretches of shingle along the shores of our south-eastern counties, where the eggs are exceedingly hard to find. Before the eggs are incubated, the old birds keep away from the nest all day, returning at night, when their shrill cries give rise to the local name of 'Night-Hawk.'"

Eggs.—Two in number, laid on the pebbles, without any sign of a nest. Mr. Read says: "Sometimes they closely resemble each other, but sometimes they are widely different in colour and markings. I have seen the eggs lying side by side, with a couple of stones in close proximity, which so closely resembled the eggs, that the latter might easily have been passed by unnoticed." The eggs are of a dark or light stone-colour, and are covered indiscriminately with brown spots or blotches, the latter being sometimes nearly black. The underlying markings are faint grey, and are generally obscure, but in one or two pale eggs they actually predominate and the dark markings are in a minority. Axis, 1·9–2·4 inches; diam., 1·45–1·6.

THE COURSERS. SUB-ORDER CURSORII.

The Coursers are entirely birds of the Old World. Like all Plovers they have a schizognathous palate, but, with the exception of the Black-and-grey Courser (*Pluvianus ægyptius*), the nostrils are schizorhinal. The tarsus is transversely scaled in front. The Sub-order contains many different forms, such as the Crab-Plover (*Dromas ardeola*), which lays a white egg in a tunnel in the sand, and the Pratincoles, to which I shall refer later on.

THE TRUE COURSERS. GENUS CURSORIUS.

Cursorius, Lath. Ind. Orn. ii. p. 751 (1790).

Type, *C. gallicus* (Gm.).

The True Coursers have a curious pectination on the middle claw, which is notched on its inner side. Five species of the genus *Cursorius* are known, of which three are peculiar to Africa, one to the desert portions of the Mediterranean Subregion and Central Asia, while one, *C. coromandelicus*, is only found in India.

I. THE CREAM-COLOURED COURSER. CURSORIUS GALLICUS.

Charadrius gallicus, Gmel. Syst. Nat. i. p. 692 (1788).
Cursorius europæus, Macg. Brit. B. iv. p. 42 (1852); Saunders, ed. Yarr. Brit. B. iii. p. 238 (1883).
Cursorius gallicus, Dresser, B. Eur. vii. p. 425, pl. 544 (1875); B. O. U. List Brit. B. p. 156 (1883); Seebohm, Brit. B. iii. p. 63 (1885); Saunders, Man. Brit. B. p. 519 (1889); Lilford, Col. Fig. Brit. B. part xxviii. (1894); Sharpe, Cat. B. Brit. Mus. xxiv. p. 34.

Adult Male.—General colour isabelline-buff or pale-tawny on the back; wing-coverts like the back; primary-quills black, the secondaries also black, but with sandy-coloured edges and white fringes at the ends; tail-feathers sandy-rufous, tipped with white, before which is a black sub-terminal band; forepart of crown sandy-rufous; hinder crown and nape pale bluish-grey, concealing a black patch on the nape; lores isabelline-white; a broad white band above the eye, joining on the nape, followed by a black band from behind the eye, above the ear-coverts to the nape; feathers below the eye whitish; ear-coverts sandy-rufous; fore-part of cheeks and upper throat white; lower throat and under surface of body sandy-isabelline, becoming whiter on the abdomen and under tail-coverts; under wing-coverts, axillaries, and quill-lining black; the lesser lower wing-coverts sandy-rufous; bill dusky-black; the angle of the mouth and base of the lower mandible white; feet china-white; iris umber-brown. Total length, 9 inches; culmen, 1·0; wing, 6·35; tail, 2·35; tarsus, 2·25.

Adult Female.—Similar in colour to the male. Total length, 9 inches; culmen, 0·95; wing, 6·2; tail, 2·3; tarsus, 2·1.

Young Birds.—Similarly coloured to the adults, but with wavy bands of dusky-grey all over the upper surface.

Range in Great Britain.—An accidental wanderer to our islands, not yet noticed in Ireland, and only once in Scotland. About twenty examples have, however, been recorded from various counties of England, mostly from the south, but the species has also been met with in Lincolnshire, Yorkshire, Northumberland, and Cumberland.

Range outside the British Islands.—The Cream-coloured Courser is a bird of the deserts of the Mediterranean Sub-region, and the Canary Islands, on one of which, Fuerteventura, it is so plentiful that hundreds of its eggs have been collected there during recent years. It is found as far south as Kordofan in Africa, and thence extends through Arabia to Persia and Central Asia and North-western India.

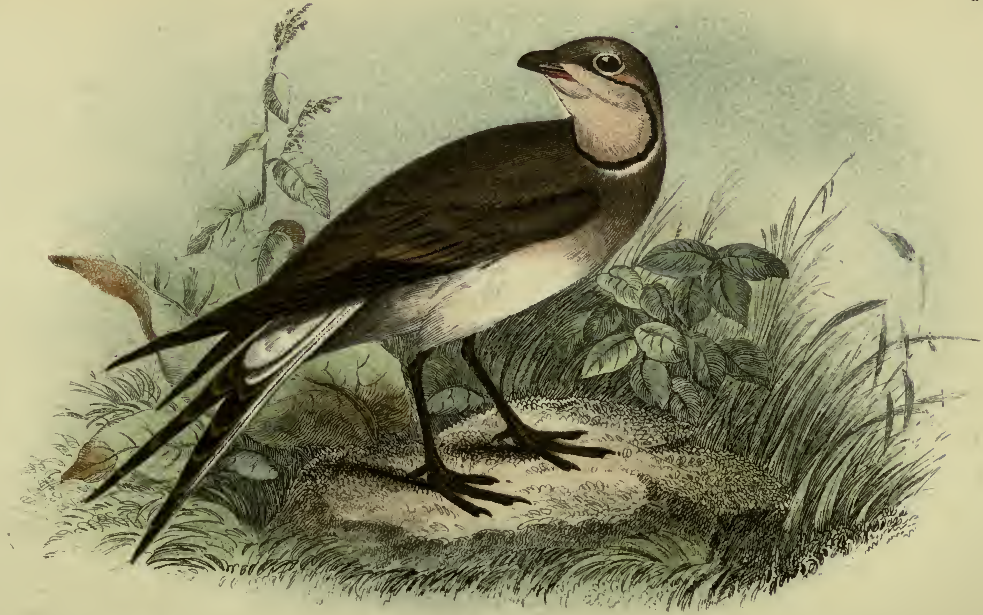
Habits.—In Colonel Irby's "Ornithology of the Straits of Gibraltar," one of the most interesting notes is that on the Cream-coloured Courser, as recorded by the French naturalist Favier, whose MSS. Colonel Irby saved from oblivion. The latter writes :—"Their food is entirely insects or larvæ, particularly *Pentatoma torquata*, and different kinds of grasshoppers. They are met with in small parties, usually frequenting dry arid plains, where they spread out in all directions, running after insects, and are very wary and difficult to get a shot at. Their cry of alarm is much like that of the Plover. They rest and sleep in a sitting position, with their legs doubled under them. Should they not fly away when approached, they run off with astonishing swiftness, manœuvring to get out of sight behind stones and clods of earth, there, kneeling down and stretching the body and head flat on the ground, they endeavour to make themselves invisible, though all the time their eyes are fixed on the object which disturbs them, and they keep on the alert ready to rush off again if one continues to approach them." Favier kept more than one in confinement, and obtained thirty-six eggs, which, until the recent influx of specimens from Fuerteventura, were almost the only genuine ones in collections. The only note which he heard the species utter he renders by the word "*rererer*." It will be noticed that the method of concealment adopted by the Courser is not unlike that practised by the Thick-knee.

Nest.—None, the eggs being laid in a little depression among stones, which closely resemble them.

Eggs.—Two in number, stone-colour in general appearance, thickly mottled all over with brown dots and scribblings, some

PLATE LXXVII.

BAILLIE'S INSTITUTION GLASGOW



PRATINCOLE.

of the spots being larger and taking the form of blotches. The underlying grey spots are equally distributed and mixed up with the darker ones. Axis, 1·35–1·4 inch; diam., 1·0–1·1.

THE PRATINCOLES. GENUS GLAREOLA.

Glareola, Brisson, Orn. v. p. 141 (1760).

These curious birds were placed even by so great a naturalist as Sundevall among the Night-Jars, principally on account of their pectinated middle claw, which is a Caprimulgine character. We have, however, already seen that this peculiarity is also shared by the Coursers, from which the Pratincoles differ in their extraordinarily long wings, the primaries being pointed and reaching to the tip of the tail, or even beyond it. There are three genera of the Pratincoles, the genus *Stiltia* of Australia, with very long legs, like those of the Coursers, the True Pratincoles (*Glareola*) and the Dwarf Pratincoles (*Galactochrysea*), all of which have very short legs.

THE TRUE PRATINCOLES. GENUS GLAREOLA.

Glareola, Brisson, Orn. v. p. 141 (1760).

Type, *G. pratincola* (Linn.).

From its long wings this Pratincole was actually placed by Linnæus among the Swallows, and we have already seen that so recently as 1872 Sundevall classed it with the Night-Jars. Besides the short tarsus, the genus *Glareola* is distinguished by its strongly forked tail, the outer feather exceeding the others in length.

I. THE PRATINCOLE. GLAREOLA PRATINCOLA.

Hirundo pratincola, Linn. Syst. Nat. i. p. 345 (1766).

Glareola pratincola, Macg. Brit. B. iv. p. 49 (1852); Dresser, B. Eur. vii. p. 411, pl. 513, fig. 1 (1874); B. O. U. List Brit. B. p. 155 (1883); Saunders, ed. Yarr. Brit. B. iii. p. 231 (1883); Seebohm, Brit. B. iii. p. 69 (1885); Saunders, Man. Brit. B. p. 517 (1889); Lilford, Col. Fig. Brit. B. part xxviii. (1894); Sharpe, Cat. B. Brit. Mus. xxiv. p. 55.

(*Plate LXXVII.*)

Adult Male.—General colour above olive-brown, slightly glossed with green; wing coverts and long inner secondaries like the back; quills greenish-black, the secondaries externally olive-brown, inclining to ashy-whitish at their ends; upper tail-coverts white; tail greatly forked, the feathers blackish, with a green gloss and paler brown tips, the base white, this gradually increasing in extent towards the outer feathers, while on the outermost one the white occupies the basal two-thirds; head like the back, the feathers below the eye whitish; the fore-part of the cheeks and throat sandy-buff, surrounded by a white line, followed by a black line, which runs from the front part of the eye, and is followed by a whitish shade; ear-coverts, hinder cheeks, sides of neck, fore-neck, and breast dark ashy-brown; lower breast, abdomen, thighs, and under tail-coverts white; axillaries and inner under wing-coverts chestnut, the former with black bases; rest of wing-coverts blackish, with a little patch of white near the lower primary-coverts; bill dark brown, red at the base behind the nostril; feet black; iris brown. Total length, 8·8 inches; culmen, 0·8; wing, 7·5; tail, 3·8; tarsus, 1·25.

Adult Female.—Similar to the male in colour. Total length, 9·2 inches; culmen, 0·7; wing, 7·15; tail, 4·2; tarsus, 1·2.

Young Birds.—Recognisable by the whitish edgings to the feathers of the upper surface, all the light markings having a sub-terminal bar of black; quills and tail-feathers similarly fringed and tipped with black; cheeks and throat creamy-white, with narrow blackish shaft-lines; fore-neck and lower throat ashy-grey, edged with white and mottled with sub-terminal bars of black; chest creamy-buff; remainder of under surface of body white.

Range in Great Britain.—An occasional visitor in spring and autumn, appearing during the season of migration. It has occurred in most of our southern and eastern counties, but also in Lancashire and Cumberland, and even in Unst, the most northern of the Shetland Isles. One example has been recorded from Co. Cork in Ireland.

Range outside the British Islands.—In localities suited to its habits, the Pratincole is found breeding in most of the Mediterranean countries, whence, according to Mr. Howard

Saunders, it extends its course to the Camargue in the south of France, where again it finds suitable breeding-ground, a few ascending the valley of the Rhone to Savoy, and spreading out over the central and northern districts of France as far west as the mouth of the Somme. The Pratincole also inhabits Hungary, but is rare in Poland. Eastwards its range extends to Central Asia, where it is found along with Nordmann's Pratincole (*G. melanoptera*), the species of Southern Russia, which is easily distinguished from the Common Pratincole by its black under wing-coverts and axillaries. In winter, *G. pratincola* extends to India, where *G. melanoptera* is, as yet, unknown, but both Pratincoles winter in Africa.

Habits.—The ways of the Pratincole are very different in many respects from those of other Plovers. Although its legs are very short, it is able to run with great swiftness, and its flight is very powerful, resembling that of a Swallow, and, like the latter bird, the Pratincole captures much of its prey on the wing. Mr. Seebohm relates that the bird has a very peculiar habit of feigning lameness. "Before the breeding-season has fairly commenced," he says, "you may stand on a piece of fallow ground and watch a dozen birds, each within pistol-shot, lying on their sides and making apparently constant efforts to expand a wing, as if in the last death-struggle, and yet you may search in vain for an egg." Mr. Osbert Salvin, who found the species breeding in the district of the Eastern Atlas, writes:—"The Pratincole was found on the table-lands of the interior, frequenting the salt lakes and fresh-water marshes. Its fearless manner and familiar habits cause it to rank high among the interesting birds of the country; and I remember few that I have watched with greater pleasure. When in proximity to their nests, the whole flock come wheeling and screaming round, while some dart passionately down to within a few feet of the intruder's head, retiring again to make another descent. When the first transports of excitement are over, they all alight one by one on the ground. Some stand quite still, watching with enquiring gaze; while others stretch themselves out, first expanding one wing, then the other, and sitting down, extend both legs. In this position they remain for some seconds, as if dead, when, suddenly springing up, they make another circuit overhead, and the whole flock passes quietly away."

Colonel Irby writes:—"We found this bird in April, on the dried mud at the lakes of Meshree el Haddar, south of Laroche in Marocco, in countless thousands. They had not then begun to lay; so possibly some of these swarms would pass on northwards. We there witnessed a number of these birds mobbing a Marsh-Harrier which had intruded on their ground, buffeting and bullying him just as Peewits will do when a Hawk passes near their breeding-ground. At times at least one hundred Pratincoles were dashing at once about the Harrier, which soon made its best way out of their district. Pratincoles are very crepuscular in their habits, flitting up and down over the surface of a river or pool much after the manner of the Indian Skimmer (*Rhynchops albicollis*) very late in the evening—as late, indeed, as they can be distinguished. They are then silent, but by day especially when disturbed, their cry is ceaseless, and the Moorish name of 'Gharrak' is doubtless derived from, as it is suggestive of, their note. They are birds of powerful flight, reminding one much of the Terns in this respect." In Greece, Mr. Seebohm found the Pratincoles less gregarious, and on the islands of the lagoon of Missolonghi he often met with single pairs nesting, and on none of them more than half a dozen pairs.

Nest.—None, the eggs being laid in a depression in the ground, though, as often as not, there is no perceptible hole.

Eggs.—Three in number, varying remarkably in colour and markings, which are sometimes so thickly distributed as to hide the ground-colour of the egg itself. This varies from a stony-buff to grey, creamy-buff, or clay-brown, and the black marks take the form of small or large spots or irregular blotches, and they are, as a rule, universally distributed over the egg. The underlying spots are faint purplish-grey, and are also spread indiscriminately over the egg. Axis, 1·1–1·4 inch; diam., 0·9–0·95.

THE WADERS. SUB-ORDER CHARADRII.

In this Sub-order are comprised all the Plovers, Sandpipers, and Snipes, generally known as Waders. They all have a schizognathous palate, opisthocœlous dorsal vertebræ, and no basipterygoid processes. The nostrils are schizorhinal, the spinal-feather tract is forked on the upper back, and occipital fontanelles are present. Most of the species have young covered with golden or buff down variegated with black, and they are able to run and pick up food for themselves soon after they are hatched.

The *Charadrii* are found in every portion of the globe, and are amongst the most migratory of birds, breeding in the extreme north, and many of them reaching the southernmost points of America, Africa, and Asia on their winter migrations.

THE PLOVERS AND SNIPES. FAMILY CHARADRIIDÆ.

There is but one Family in the Sub-order *Charadrii*, and its characters are, of course, synonymous with those of the Sub-order. In this volume I have followed the arrangement adopted by Mr. Howard Saunders in his excellent "Manual," but in the "Catalogue of Birds in the British Museum," I have adopted the following sequence of the Sub-families of the *Charadriidæ*:—I. *Arenariinæ* (Turn-stones); II. *Hæmatopodinæ* (Oyster-catchers); III. *Lobivanellinæ* (Wattled Plovers); IV. *Charadriinæ* (True Plovers), *Himantopodinæ* (Stilts and Avocets), *Totaninæ* (Sandpipers), *Scolopacinæ* (Snipes), and *Phalaropinæ* (Phalaropes).

In my present arrangement I begin with

THE TRUE PLOVERS. SUB-FAMILY CHARADRIINÆ.

All the True Plovers have the tarsus reticulated both in front and behind, the reticulations being generally well-marked and in the form of hexagonal scales, but not transverse plates, as in many Plovers. There is also a "dertrum," or swelling of the end of the bill, which is more prominent than the basal portion.

Among the *Charadriinæ* are contained a few genera of

Wattled and Spurred Plovers, the former having a lappet of bright coloured skin on the face, while the spur, in those genera which possess it, like the Nile Plover (*Hoplopterus speciosus*), is often quite a formidable weapon. In England, however, none of these forms have as yet made their appearance in a wild state, and all our species are unarmed and undecorated.

THE GREY PLOVERS. GENUS SQUATAROLA.

Squatarola, Leach, Syst. Cat. Mamm. & Birds, Brit. Mus. p. 29 (1816).

Type, *S. helvetica* (Linn.).

In the first group of Plovers, to which the genus *Squatarola* belongs, the inner secondaries are always very long and pointed. They are all birds of rapid flight, and very different in the latter respect from the slower and more flapping Lapwings. The Grey Plover, which is the only species of the genus *Squatarola*, puts on a black breast in summer, like the Golden Plovers (*Charadrius*), but it is easily distinguished from the latter by the *presence of a small hind-tce.*

I. THE GREY PLOVER. SQUATAROLA HELVETICA.

Tringa helvetica, Linn. Syst. Nat. i. p. 250 (1766).
Pluvialis squatarola, Macg. Brit. B. iv. p. 86 (1852).
Squatarola helvetica, Dresser, B. Eur. vii. p. 455, pls. 515, fig. 2, 517, fig. 2, 518, fig. 2 (1871); B. O. U. List Br. B. p. 158 (1883); Saunders, ed. Yarr. Brit B. iii. p. 278 (1883); id. Man. Brit. B. p. 535 (1889); Sharpe, Cat. B. Brit. Mus. xxiv. p. 182.
Charadrius helveticus, Seebohm, Brit. B. iii. p. 44 (1886).
Squatarola cinerea, Lilford. Col. Fig. Brit. B. part xviii. (1891).

Adult Male.—General colour above mottled with bars of black and ashy-white, the latter in the form of notches and tips on the feathers; scapulars and wing-coverts like the back, the greater series edged with white, and the inner ones notched; quills black, with the middle of the shaft white, and with white on the inner webs, extending on the inner primaries to the outer web also; the secondaries brown, edged and tipped with white, the bases of the inner webs also white; the innermost secondaries like the back; lower back and rump dusky-brown, with white spots and fringes on the feathers; upper tail-coverts and tail-feathers white, barred with black or blackish-brown, the bars decreasing towards the outer feathers, being broken up into spots on the outer web; crown of head like the back, but more hoary-white and less spotted with black; forehead and a broad eyebrow white, extending down the sides of the neck, and forming a large patch on the sides of the upper breast; lores, side of face, ear-coverts, and under surface of body black, excepting the abdomen and under tail-coverts, which are pure white; under wing-coverts white; axillaries black; quills below dusky, white on the inner webs; lower primary-coverts pale ashy; bill, feet, and claws black; iris dark hazel. Total length, 10·5 inches; culmen, 1·3; wing, 8·1; tail, 2·9; tarsus, 1·8.

Adult Female.—Similar to the male, but never quite so much spangled with black on the upper surface, so that the general appearance is somewhat browner; the black on the face and under parts is never so much developed, and consequently these parts are never so uniform black, but are more mottled with black than the male. Total length, 11 inches; culmen, 1·3; wing, 8·0; tail, 2·9; tarsus, 1·8.

Winter Plumage.—The chief difference between the summer and winter dress of the Grey Plover lies in the absence of black on the face and breast during the latter season. The whole upper surface is more uniform ashy-brown, the feathers edged with whitish, and having a sub terminal blackish shade; lores and an indistinct eyebrow white; ear-coverts dingy-black; sides of face white, streaked with dusky; throat and under-parts white, the lower throat and fore-neck pale ashy-brown, slightly mottled with dusky markings; under wing-coverts white; *axillaries black.*

Young Birds.—Resemble the adults in winter plumage, but are spangled with golden buff above, so that they resemble the Golden Plover, from which, however, the Grey Plover can always be distinguished, at any age, by its *black axillaries.*

Range outside the British Islands.—Although a certain number of Grey Plover remain with us during the winter, the species is much better known as a spring and autumn migrant, and is especially noticed at the latter season of the year, when young birds are often procurable. Black-breasted examples are to be found up to the end of May in the British Islands, while some have been shot in June and July. These were probably non-breeding birds. It is never so common in Ireland as in England and Scotland, and is always more abundant on the east than on the west, so that in the Outer Hebrides it is considered a rare bird.

Range outside the British Islands.—The Grey Plover breeds in the high north of both hemispheres, and may thus be considered a typical circum-polar bird. Until recent years its egg was one of the chief *desiderata* for every collector, and even now but few collections contain genuine examples. It has been found nesting on Kolguev Island, as well as in the valley of the Petchora, and on the Taimyr Peninsula in Siberia, while in the New World the only known places are Alaska, the Anderson River, and the Melville Peninsula. In winter, however, it wanders far southward and occurs in nearly every country of the Old World, visiting South Africa, the Indian Peninsula, and Australia. In the New World it does not range so far to the southward, and appears not to extend beyond Brazil or Peru, though it probably goes to the extreme of the South American continent.

Habits.—The Grey Plover is seldom met with inland, like the Golden Plover, but is decidedly more a bird of the seashore and the mud-flats. It is also of a shyer disposition, and is much more difficult than the Golden Plover to call within gun-shot, partly because its call-note is much harder to imitate. In general appearance it is a stout and hardy bird, and may often be seen in great parties on the sand left by the receding tide, picking up its food, which consists of marine insects, small shells, worms, and seaweed. Sometimes flocks of forty or fifty individuals may be seen together, but I have myself only observed it either singly or in small parties of six or seven. Like most Waders, it is active when the receding tide leaves the sand-banks and mud-flats exposed, but at all times appears to be more lively as evening approaches.

The romance attaching to the capture of the Grey Plover's eggs is fast being dispelled, but for many years it was considered to be the aim and object of every traveller to the Arctic Regions to discover the nesting habits of the bird. The first authentic eggs were taken by Von Middendorf in the Taimyr Peninsula (N. lat. 71°–74°), and afterwards eggs were also obtained in Arctic America by Mr. MacFarlane, but for our best information as to the breeding of the species, science is indebted to the expedition of Mr. Henry Seebohm and Mr. J. A. Harvie-Brown, who found eleven nests on the tundras of the Petchora River. Since then Mr. Trevor-Battye has obtained eggs on Kolguev, and on the same island Mr. H. J. Pearson and his brother, Mr. E. C. Pearson, found many nests in the summer of 1895.

The account given by Mr. Seebohm of the search for the nests is worthy of full quotation, did space but permit. It is told with all the fulness of detail and careful observation with which I have seen him write down the record of the day's work on the expeditions on which it has been my good fortune to accompany him. He tells of the watching of each female bird on to the nest, and continues as follows:—"The female generally comes first to the nest, but she comes less conspicuously than the male, generally making her appearance at a considerable distance, on some ridge of mossy land. When she has looked round, she runs quickly to the next ridge and looks round again, generally calling to the male with a single note. The male seldom replies; but when he does so, it is generally with a double note. When the female has stopped and looked round many times, then the male thinks it worth while to move, but, more often than not, he joins the female by flying up to her. The female very seldom takes wing. She is very cautious, and, if she is not satisfied that all is safe, she will pass and repass the nest several times before she finally settles upon it. She rarely remains upon one post of observation long, but the male often remains for ten minutes or more, upon one tussock of a ridge, watching the movements of the female." Another pair of birds was watched by the two English naturalists for two hours, but the birds flew about, without any nest being discovered, and Mr. Seebohm continues;—"At last the mosquitoes tired us out, and we gave up the watching game and commenced a search. At last we found out the secret of the birds' behaviour. We picked up some broken egg-shells, and concluded at once that the bird had young. We tried to find them, but in vain. The two hours, however, were not wasted. The birds came nearer to me than they had ever done before. I often watched them at a distance of not more than ten yards, and was able to hear their notes more distinctly. The note most frequently used is a single plaintive whistle, 'köp,' long drawn out, the ö pronounced as in German, and the consonants scarcely sounded. This, I am almost sure, is the alarm-note; it is principally uttered by the female when she stops and looks round, and sees something of which she disapproves. If the male shows any anxiety about the nest, which he seems to do more and more as incubation progresses, he also utters the same note. The double note *kl-ee* or *kleep*, the *kl* dwelt upon so as to make it a separate syllable, is also uttered by both birds. It is evidently their call-note. I have seen the female, when she has been running away from the male, turn sharp round and look towards him when he has uttered this note, exactly as anyone might do who heard his name called. Whilst we were watching this pair of birds, a couple of other Grey Plovers came up and called as they flew past. The male answered the call and flew towards them. On the wing this whistle is lengthened out to three notes. I had some difficulty in catching this note exactly. It is not so often uttered as the two others I have mentioned, and is generally heard when you least expect it; but I am almost sure that it is a combination of the alarm-note with the call-note—*kl-ee-köp*."

Then he relates how the tenth nest was procured, and a very good idea is conveyed of the discomforts attending even the discovery of a much desired egg. "By this time we were pretty well tired with tramping the tundra. The ceaseless persecution of the mosquitoes, and the stifling feeling caused by our having to wear a veil with the thermometer above summer heat, had taxed our powers of endurance almost to the utmost, and we turned our faces resolutely towards our boat, but a most anxious pair of Grey Plovers proved too great an attraction for us to resist," &c. (cf. Seebohm, Hist. Brit. B. iii. p. 53), and to this book one must turn if we want to read the story of the re-discovery of the eggs of the *Squatarola helvetica.*

Nest.—Practically none. A hollow, round and deep, with a few broken slender twigs and reindeer-moss.

Eggs.—Four in number, and double-spotted. Mr. Seebohm describes them as follows:—"Intermediate in colour between those of the Lapwing and the Golden Plover, and subject to variation, some being much browner, and others more olive, none quite as olive as typical Lapwing's eggs or as buff as typical ones of the Golden Plover, but the blotching is in every respect the same. The underlying spots are equally indistinct, the surface spots are generally large, especially at the larger end, but occasionally very small and scattered, and sometimes taking the form of thin streaks. They vary in length from 1·9 to 2·2 inches, and in breadth from 1·35 inch to 1·4. Only one brood is reared in the year."

THE GOLDEN PLOVERS. GENUS CHARADRIUS.

Charadrius, Linn. Syst. Nat. i. p. 253 (1766).
Type, *C. pluvialis* (Linn.).

Like the Grey Plover, the Golden Plovers, of which there are two species, have a black face and black breast in summer, but the genus *Charadrius* is at once distinguished from *Squatarola* by the absence of the hind-toe.

The range of the genus is very nearly cosmopolitan, the species breeding in high northern latitudes, and wintering in all the southern continents of the globe.

I. THE GOLDEN PLOVER. CHARADRIUS PLUVIALIS.

Charadrius pluvialis, Linn. Syst. Nat. i. p. 254 (1766); Dresser, B. Eur. vii. p. 435, pl. 515, fig. 1 (1871); B. O. U. List Brit. B. p. 157 (1883); Saunders, ed. Yarr. Brit. B. iii. p. 271 (1883); Seebohm, Hist. Brit. B. iii. p. 35 (1885); Saunders, Man. Brit. B. p. 531 (1889); Lilford, Col. Fig. Brit. B. part xiii. (1890); Sharpe, Cat. B. Brit. Mus. xxiv. p. 191.

Pluvialis aurea, Macgill. Brit. B. iv. p. 94 (1852).

Adult Male in Breeding-Plumage.—General colour above mottled with black, golden buff and ashy-whitish markings; scapulars and wing-coverts more distinctly notched and barred with golden, the markings less distinct on the lesser coverts, which are brown, the median and greater series with many golden bars; quills dark brown, with whity-brown bases to the secondaries, the innermost of which are notched or barred with golden; lower back, rump, and upper tail-coverts like the rest of the upper surface, but more plainly mottled with golden bars; tail-feathers brown, barred with lighter brown or golden, the outer ones externally notched with white, the light bars tinged with golden; head like the back, with a white frontal band and eyebrow, extending down the sides of the neck and joining the white on the sides of the body; base of forehead, lores, sides of face, ear-coverts, and throat smoky-black; centre of fore-neck, breast, and abdomen deep black, flanked with white for their entire length, though the golden and black plumage of the sides of the neck descends on to the sides of the breast; thighs black; under tail-coverts white, marked with black on the vent; under wing-coverts white, mottled with ashy-brown round the bend of the wing; *axillaries pure white;* bill, feet, and claws nearly black; iris dark hazel. Total length, 10 inches; culmen, 1·0; wing, 7·45; tail, 2·9; tarsus, 1·6.

Adult Female in Breeding-Plumage.—Similar to the male, but never having the black so uniformly distributed on the breast, but always more patchy. Total length, 10 inches; wing, 7·4.

Winter Plumage.—Differs principally from the summer plumage in wanting the black breast and the black on the face.

Young Birds.—Resemble the winter plumage of the adults, and have consequently no black on the face and breast. They are rather more plentifully spangled with golden on the upper surface, with the crown somewhat blacker; the throat white; the lower throat, fore-neck, and breast ashy-brown, mottled with edges and bars of pale golden-buff, with triangular dusky-brown spots on the lower throat and fore-neck; the breast and sides of the body ashy-brown, with dusky-brown bars; abdomen and under wing-coverts white, the lower primary-coverts ashy-brown; axillaries *white.*

Nestling.—Clothed in golden down mottled with black, the latter, however, scarcely forming any distinct pattern; on each side of the back a streak of ashy-whitish down, and the wings marked with a golden patch, with a spot of bright yellow on the lores and eyebrow; below the eye a spot of ashy-whitish, with some markings of the same on the hind-neck and sides of the neck; cheeks and under surface of body ashy-whitish, with a patch of dusky-blackish underlying the down of the breast.

Range in Great Britain.—The Golden Plover nests on the moor-land of all the three kingdoms, a few being found on the higher ground of Devonshire and Somerset. In Wales, and from the Derbyshire moors northward into Scotland the species breeds, sometimes in abundance, especially in the Orkneys, Shetlands, and the Hebrides. "In Ireland," writes Mr. R. J. Ussher, "the Golden Plover breeds on mountains in Donegal, Antrim, Fermanagh, Cavan, Dublin, Wicklow, Queen's County, Tipperary, Waterford, Cork, Kerry, Galway, Mayo, and Sligo. In Connemara it breeds both on mountains and bogs, and Mr. H. C. Hart has found it breeding on a vast bog in the centre of Northern Mayo." The species winters in large flocks in many parts of the British Islands, and a large migration takes place every autumn and spring.

Range outside the British Islands.—The Golden Plover nests in the high north of Europe, as well as in Iceland and the Færoes. It has been found in Novaya Zemlya, Jan Mayen, and in Greenland. It nests also on the moors of Germany, Brabant, and Luxembourg, but in the rest of Europe it is generally known as a migrant, wintering in the Mediterranean countries, and, more rarely apparently, passing down the continent of Africa. To India it is a very rare winter visitor; Mr. Blanford procured a specimen in Baluchistan in December, and a single example from Sehwan in Sind, killed in January, is in the Hume collection.

Habits.—The clear-sounding note of the Golden Plover is a sure indication of the presence of the bird. Mr. Seebohm calls the alarm-note a plaintive *kö*, scarcely distinguishable from that of the Grey Plover, and the call-note is a double *kl-ēē*. Mr. Howard Saunders renders it as a clear whistling *tlüi*, which seems to me to be a very efficient rendering of the bird's voice on paper. It is a note somewhat easy to imitate, and I have seen a whole flock of birds lured to their death in Heligoland by a skilful repetition of the cry. It can be heard a long way off, and as most of the Heligolanders work in the potato-fields with a gun lying close handy, on the look out for any migrating birds, be they Plover or Hooded Crows, the familiar note of the Golden Plover out at sea is the signal for a score of answering whistles from the rock; and very soon the unsuspecting flock is seen, like a little cloud skimming over the waves, heading straight for the rocky island. In a few seconds they are overhead, in a few more seconds they have passed on and far out to sea, leaving a tribute of some of their number. The whistling re-doubles, and once more the flock turns in its course and makes for the island, only to meet with the same hot reception; and these manœuvres are repeated till but a small remnant escapes. On Sandy Island, about a mile and a half from Heligoland, where the "bathing guests" flock from all parts of Germany, I have seen the Golden Plovers running about quite tame, within twenty yards of me, as if they knew that no gun was allowed to be fired before 2 p.m. During the afternoons, however, when we landed, intent on collecting, they soon became more shy.

Even in the breeding-season the Golden Plover may be found in small parties, while in the winter large flocks collect together, and at that time of year they are often met with inland on the open lands and fallow ground, searching for worms and grubs, while on the shore various small marine animals form the staple diet of the birds.

Mr. Seebohm observes:—"The Golden Plover makes itself one of the most conspicuous birds on the moors. No sooner does the observer set foot on one of those interminable wilds than the birds rise here and there from different parts of the heath and fly towards him, sometimes alighting within a few yards of him. Although to some extent a wary bird, much of its shyness disappears in spring, and it may often be noticed at this season running lightly amongst the heath, or standing quietly, with head erect, on some tuft of grass intently watching the intruder. In early spring the Golden Plover may frequently be observed in large flocks passing towards the moors, or even on the moors, where, if alarmed, they rise in the air, and wheel and turn in a peculiarly graceful manner. These flocks soon disperse, and scatter themselves in pairs over the moors for the purposes of breeding. The flight of the Golden Plover is powerful and well sustained; it is not so erratic as that of the Peewit, and is performed with moderately quick beatings of the wings. When on migration, or when passing from place to place, as is oft their wont in winter, the flock generally takes the shape of a wedge."

Nest.—Placed in a tuft of grass or in a depression in the ground, and made of dry grass with a little heather and moss.

Eggs.—Four in number, varying considerably in colour, from rich clay-brown to light stone-grey, mottled all over with blotches of black, the underlying spots and blotches being reddish-brown. As a rule, the dark blotches are congregated towards the larger end of the egg, and the smaller end has the smaller spots, and occasionally many tiny dots. Axis, 1·85–2·1 inches; diam., 1·35–1·45.

II. THE LESSER GOLDEN PLOVER. CHARADRIUS DOMINICUS.

Charadrius dominicus, P. L. S. Müller, Syst. Nat. Anhang. p. 116 (1766); Sharpe, Cat. B. Brit. Mus. xxiv. p. 195.

Charadrius fulvus, Dresser, B. Eur. vii. p. 443, pls. 516, 517, figs. 2, 3 (1871); B. O. U. List Brit. B. p. 157 (1883); Saunders, ed. Yarr. Brit. B. iii. p. 276 (1883); Seebohm, Brit. B. iii. p. 40 (1885); Saunders, Man. Brit. B. p. 533 (1889).

Adult Male.—Similar to *C. pluvialis*, but much smaller, with more slender legs and feet, and distinguished at once by its *smoke-brown axillaries;* bill dark olive; feet leaden-grey; iris dark brown. Total length, 9 inches; culmen, 0·95; wing, 6·6; tail, 2·4; tarsus, 1·65.

Adult Female.—Similar to that of *C. pluvialis*, but distinguished by the smoke-brown axillaries. Total length, 9 inches; wing, 6·25.

The young birds and the winter plumage of the adults exactly correspond with the changes of the Golden Plover, but the colour of the axillaries always distinguishes the two species.

Range in Great Britain.—An accidental visitor only, having occurred four times. In December, 1874, a specimen was purchased in Leadenhall Market from among a lot of Golden Plover, which were said to have come from Norfolk. In the autumn of 1882, Mr. J. H. Gurney procured a second example in the same market. In August, 1883, a third occurrence was recorded, in Perthshire, by Mr. J. G. Millais, who also received another Lesser Golden Plover from Stennis, in Orkney, in November, 1887.

Of these four specimens, the first and last are referred to what has been called the Asiatic race of *C. dominicus*, while the second and third belonged to the American race of the species. The difference between these two races consists in the fact that specimens from Eastern North America are somewhat larger, with a wing measuring 6·8–7·5 inches, whereas the wing in the Asiatic race is not more than 6·7 inches in length. Other characters have been adduced for the separation of these two races, such as the shorter tarsi and toes, and less golden coloration in the American bird. My recent studies on the *Charadriidæ* have, however, convinced me that no hard and fast line can be drawn between these eastern and western forms, and I consider that there is but one species of Lesser Golden Plover, which must bear the older name of *C. dominicus*.

Range outside the British Islands.—With the exception of Europe, where the present species is only met with as an occasional visitor, it occurs in nearly every part of the world, breeding in the high north and wintering in South America, the Pacific Islands, Australia, and India, but not apparently visiting Africa.

The Lesser Golden Plover has occurred in Heligoland, in Poland, in Malta, and near Malaga, in Spain.

Habits.—Mr. Seebohm found the nest and eggs of the present species during his expedition to the Yenesei Valley in Siberia, and he describes the note as being very similar to that of the Grey Plover, the commonest note being a plaintive *kö*, but occasionally the double note *kl-ēē* is heard, but still more often the treble note *kl-ee-kö*.

Mr. E. W. Nelson gives the following account of this Golden Plover, as observed by him in Alaska:—"The males are conspicuous objects, as they stand like silhouettes, their black and white breasts and sides of neck presenting a sharp, clear-cut outline on the brown and grey background. At intervals, their clear, mellow, and melancholy note rises for a moment, and then the bird apparently sinks into a day-dream, and remains motionless for some time, until he is prompted to assure his partner of his presence by another call. The male at this season has a brighter plumage than the female, and in places little frequented by man, he becomes very unsuspicious; near villages, however, he is always on the look-out, and is difficult to approach even when he is found by his nest. Towards the end of May, and during the first weeks of June, the males utter a clear, rich, song, which is frequently heard during the twilight of the short Arctic nights.

"When I was camping at the Yukon mouth during the last of May and the first part of June, 1879, these birds were scattered all about in the vicinity of the tent, and frequently, during the middle of the night, the song was heard close by, and was exceedingly sweet and musical. One night, in particular, I remember lying awake, listening to the usual continuous faint clicking among the disintegrating ice in the river, which seemed to make the silence still more marked, when, suddenly, just at the back of the tent, arose the clear, plaintive note of the Golden Plover, which may be represented by the syllables *too-lee-e*. Soon after, in the same sweet, musical tone, was uttered a marvellously harmonious succession of notes, which I wrote down at the time, listening to the song as it was repeated again and again, and ascertaining the exact number of syllables. These, I find, are very imperfectly represented as follows: *Tēē-lēē-lēē*, *tū-lēē-lēē*, *wĭt*, *wĭt*, *wĭt*, *weē-ŭ wĭt*, *chê lēē-ū tōō lēē-ē*. The three last syllables are the ones most commonly uttered, serving as a call-note; but the song in full is only repeated on special occasions, as before remarked, being oftener heard during the still hours of the night than during the day, if, indeed, it can be called night when the sun disappears below the horizon for little over an hour."

Nest.—The one discovered by Mr. Seebohm in Siberia was a mere hollow in the ground, on a piece of turfy land, overgrown with moss and lichens, and was lined with broken stalks of reindeer moss. Mr. Nelson says that sometimes a slight structure is made of dried grass, which, with perhaps a few dead leaves of the dwarf willow, are arranged in a circular saucer-shaped form, about four or five inches across.

Eggs.—Four in number, very similar to those of the European Golden Plover, but slightly smaller, the markings being precisely similar to those of the last-named bird, the black blotches being confluent and generally near the larger end, while the underlying grey markings are scarcely perceptible. Axis, 1·85–2·05 inches; diam., 1·27–1·35.

THE RED-BREASTED DOTTERELS. GENUS OCHTHODROMUS.

Ochthodromus, Reichenb. Av. Syst. Nat. p. xviii. (1852).

Type, *O. wilsoni* (Ord).

In the present genus, and in the Sand-Plovers, there is no specially donned black breast in summer, as in the Grey and Golden Plovers. Of all the species now to be considered, the Dotterel (*Eudromias morinellus*) is the only one which has black on the under surface. In the genus *Ochthodromus* the bill is much stouter than in the smaller species of Sand-Plovers, belonging to the genus *Ægialitis*, and most of the species have a cinnamon-coloured band across the chest in summer plumage.

I. THE ASIATIC DOTTEREL. OCHTHODROMUS ASIATICUS.

Charadrius asiaticus, Pallas, Reis. Russ. Reichs. ii. p. 715 (1773).

Ægialitis asiatica, Dresser, B. Eur. vii. p. 479, pls. 520, fig. 1, 522 (1878); Butler, Ibis, 1890, p. 463; Southwell, P. Z. S. 1890, p. 461; Lilford, Col. Fig. Brit. B. part xxi. (1892).

Ochthodromus asiaticus, Sharpe, Cat. B. Brit. Mus. xxiv. p. 23.

Adult Male in Summer Plumage.—General colour above brown, without any rufous collar on the hind-neck; forehead and sides of face white, with no black on the forehead or ear-coverts; under surface of body white, with a broad band of bright chestnut across the fore-neck, with a narrow black band skirting the lower edge of the rufous neck-band; quills dark brown, the primaries with white shafts, but otherwise without white on any of the quills; axillaries white; bill black; feet greenish-olive, the toes dusky; iris dusky hazel. Total length, 7 inches; culmen, 0·9; wing, 5·65; tail, 2·15; tarsus, 1·35.

Winter Plumage.—Differs from the summer plumage in wanting the rufous chest-band, which is replaced by brown, the rest of the under surface being white. The general colour is rather dark brown, including the head; the sides of the face, forehead, and eyebrow are tinged with sandy-buff, of which there is a shade also round the hind-neck; throat isabelline-white, separated from the white breast by a broad band of ashy-brown, extending from the lower throat to the fore-neck and chest, and to the sides of the upper breast.

Young Birds.—Resemble the winter plumage of the adults, but are distinguished by having sandy-buff edges to the feathers of the upper surface, and the sides of the face and the chest-band are also decidedly tinged with sandy-buff.

Characters.—Young birds might perhaps be passed over for the young of the Ringed Sand-Plover, but they can always be distinguished by their longer tarsi.

Range in Great Britain.—On the 23rd of May, 1890, a pair of strange Plovers were seen in a market garden on the North Denes, at Yarmouth, and the male was shot and forwarded to Mr. Southwell, at Norwich, by whom it was sent for exhibition at the meeting of the Zoological Society on the 17th of June in the same year. The bird was in full plumage, and has since been placed in the Norwich Museum.

Range outside the British Islands.—The breeding home of this species is in the Kirghis Steppes and Central Asia, whence it wanders in winter down the east coast of Africa to the Cape and Damara Land. It is at the same time of year a visitor to Western India, but is apparently a very rare bird there. It visits the Caspian and Palestine on its migrations, and has also been captured in the Indian Ocean far out at sea. Besides the British example, the species has also been taken in Heligoland, as well as in Italy.

Habits.—In their winter home in South Africa, these Dotterels are described by Mr. Arnott and Mr. Ayres as frequenting the open flats and grass-lands, where they are found in flocks of from six to twenty in number. They run with great swiftness, and have much the appearance of Burchell's Courser, according to Mr. Ayres, who also says that when they rise, their flight resembles that of a Pratincole, and they utter much the same stridulous note of alarm. Their food consists principally of beetles and other small insects, on which they become very fat.

THE BLACK-BREASTED DOTTERELS. GENUS EUDROMIAS.

Eudromias, Brehm, Vög. Deutschl. p. 544 (1831).

Type, *E. morinellus* (Linn.).

The single representative of this genus is a more heavily-built bird than the species of *Ægialitis* and *Oxyechus*, but it has the shorter bill of the latter birds, and holds an intermediate position between them and the species of *Ochthodromus*. Its peculiar coloration in the full plumage, and its comparatively shorter tarsi distinguish it, and the bare part of the tibia is not so extended as in the genus *Ægialitis*.

I. THE DOTTEREL. EUDROMIAS MORINELLUS.

Charadrius morinellus, Linn. Syst. Nat. i. p. 254 (1766); Seebohm, Brit. B. p. 30, pl. 26, figs. 1–3 (1885).

Eudromias morinellus, Dresser, B. Eur. vii. p. 507, pl. 526 (1875); B. O. U. List Brit. B. p. 160 (1883); Saunders, ed. Yarr. Brit. B. iii. p. 246 (1883); id. Man. Brit. B. p. 521 (1889); Sharpe, Cat. B. Brit. Mus. xxiv. p. 234.

Adult Male.—General colour above ashy-brown, streaked with sandy-buff, the feathers being edged with this colour; wing-coverts like the back, and edged with sandy-buff; bastard-wing, primary-coverts, and quills dusky-brown; the first primary with a white shaft and white outer web; rest of the primaries blackish along the outer web and at the ends, the secondaries fringed with whitish, the innermost edged with sandy-buff, and resembling the back; crown of head blackish-brown, slightly varied with sandy-buff margins to the feathers;

base of forehead and lores white, mottled with black spots; a broad white eyebrow, extending as far back as the sides of the nape; sides of face and ear-coverts white, spotted and streaked with dusky-brown, the ear-coverts brown along the upper and hinder margin; throat white, with dusky streaks on the lower throat; sides of neck and a broad band across the fore-neck light ashy-brown, marked with sandy-buff, and bordered on its lower edge by a narrow band of black, this black band followed by a band of white across the chest; breast and sides of the body orange-chestnut; centre of breast and upper abdomen black; lower abdomen, thighs, and under tail-coverts pure white; axillaries, under wing-coverts, and quill-lining pale smoky-grey; bill blackish; legs brownish-green; toes blackish-grey; iris brown. Total length, 8·5 inches; culmen, 0·75; wing, 5·8; tail, 2·5; tarsus, 1·4.

Adult Female.—Similar to the male, but not quite so brightly coloured, and the black patch on the abdomen less developed.

It is generally said that the female Dotterel is the brighter of the two. I cannot find this fact borne out by our series in the British Museum, and in the pair procured by Mr. Ogilvie-Grant in Ross-shire, the male was distinctly richer in colour than the female.

Winter Plumage.—Wants the black on the abdomen, and also the chest-bands. The colour of the upper plumage is like that of summer, except that the head is not so black, being brown, with sandy-buff streaks; the sides of the face ashy-fulvous, streaked with dark brown; the chin white; throat ashy-brown, streaked with dusky-brown, with a faintly indicated band of white on the chest; remainder of under surface of body isabelline-white, with a sandy-buff tinge on the sides of the body.

Young Birds.—Resemble the winter plumage of the adults, but distinguished by having the mantle blackish-brown, with whitish edgings to the feathers; the throat and under-parts washed with ochreous-buff.

Nestlings.—Black above, mottled with spots of rufous or sandy-buff; head patterned with black, with a conspicuous white forehead and eyebrow, with a black loral streak, and a line of black down the centre of the forehead; round the back of the head a creamy-white band.

Range in Great Britain.—The Dotterel still breeds in the mountainous portions of the north of England and Scotland, but undoubtedly in decreasing numbers. It passes northward in spring, and affects the higher ground on its way north, but does not nest anywhere south of Cumberland. It is a very rare bird in Wales and on the western coasts of England and Scotland, as well as in Ireland. On its journey south in autumn, the Dotterel is sometimes shot on the sea-coast, but the birds then met with are principally young ones; and that the species occasionally stays with us somewhat late on the autumn migration, is proved by an immature bird in the British Museum, presented by the Hon. W. Edwardes, who shot it in Pembrokeshire on the 23rd of November.

Range outside the British Islands.—The Dotterel breeds on the high fells of Scandinavia, and also on the tundras of Russia, Siberia, and Novaya Zemlya, as well as on certain of the highlands of Central Europe, and Central and Eastern Siberia. In winter it visits Persia and the countries of the Mediterranean.

Habits.—The Dotterel migrates somewhat late in the season, arriving at its northern haunts at the end of April or the beginning of May. Small flocks arrive at these times, and for about a fortnight, according to the notes of the late Mr. Heysham, the birds frequented the fallows and barren pasture-grounds, retiring later to the higher ground near the tops of the mountains to breed. They are very tame birds, and the name of "Dotterel" is supposed to have been acquired from the foolish confidence with which they would allow a fowler to approach and capture them with a net. Even in their winter quarters, the Dotterels are remarkably tame, and Canon Tristram relates how he found them in large flocks on the steppe-lands of Palestine, when they ran almost under the very feet of the horses.

The altitude at which the nest of the Dotterel is placed, renders the taking of the nest by no means an easy matter. Mr. Frank Nicholson has for many years studied the Dotterel on the high Cumberland mountains, and has taken many nests there, while Mr. Ogilvie-Grant and some brother-naturalists have found the nest in Banffshire. Colonel Feilden describes the ways of the female bird at her nest. They are very similar to those of the Grey Plover, and, as long as he was near the nest, the bird flew from place to place around him, but when he had gone farther off she "alighted on a hummock, looked round, ran along the narrow paths for some distance, when she again mounted a hummock to make further observations, and, after passing backwards and forwards in a similar manner, finally stood still at the nest, and settled down on the eggs." She allowed him to approach very closely before leaving them, when she fluttered off, as if wounded, remaining at no great distance, constantly uttering her plaintive note.

Nest.—None, the eggs being deposited in a hollow in the mossy ground.

Eggs.—Three in number. Ground-colour greyish stone-colour or light clay-brown, with a tinge of olive or greenish on some eggs. The spots and blotches, most of which are confluent, are mainly collected at the larger end of the eggs. In the midst of the black markings a reddish shade is often seen, but the underlying spots of purplish-grey are scarcely perceptible. Axis, 1·55–1·7 inches; diam., 1·1.

THE SHARP-TAILED DOTTERELS. GENUS OXYECHUS.

Oxyechus, Reichenb. Av. Syst. Nat. p. xviii. (1852).
Type, *O. vociferus* (Linn.).

The members of this genus differ from the other Dotterels in having a very long and wedge-shaped tail, which is more than half the length of the wings. There are four species of *Oxyechus* known, one of them being the well-known "Kill-deer" Dotterel of North America, while the other three, *O. tricollaris*, *O. bifrontatus*, and *O. forbesi*, are all African.

I. THE KILL-DEER DOTTEREL. OXYECHUS VOCIFERUS.

Charadrius vociferus, Linn. Syst. Nat. i. p. 253 (1766); Seebohm, Brit. B. iii. p. 28, pl. 26 (1885).
Ægialitis vocifera, B. O. U. List Brit. B. p. 120 (1883); Saunders, ed. Yarr. Brit. B. iv. p. 266 (1883); id. Man. Brit. B. p. 529 (1889); Lilford, Col. Fig. Brit. B. part xxv. (1893).
Oxyechus vociferus, Sharpe, Cat. B. Brit. Mus. xxiv. p. 242 (1896).

Adult Male.—General colour above dark brown, the *lower back, rump, and upper tail-coverts light cinnamon-rufous ;* lesser and median wing-coverts like the back, the greater coverts darker brown, broadly tipped with white, forming a wing-band ; primary-coverts and quills blackish with white fringes or tips ; the long primaries white on the inner web till near the ends, which are blackish-brown ; the first four primaries with a white mark along the shaft at a short distance from the tip ; the rest of the primaries with a white mark before the end of the outer web ; the secondaries blackish, white at the base, on the inner web, and along the tip, the white increasing on the inner secondaries, and the black decreasing to a spot on the outer web, and finally disappearing altogether on the interior quills ; the long innermost secondaries like the back, the outer ones light ashy-brown, dark brown along the outer web, the tip of which is white ; *outer tail-feathers cinnamon-rufous*, broadly tipped with white, before which is a sub-terminal bar of black ; crown of head dark brown, separated from the mantle by a black collar ; forehead white, with a black bar behind ; a broad white eyebrow ; under surface of body white, with a broad, black collar across the fore-neck, uniting to the collar round the hind-neck ; this black collar succeeded by a narrower collar of white, and again on the chest by a second black collar ; bill black ; feet pale pinkish or pale greyish-yellow ; iris dark brown ; eyelid orange-red or scarlet. Total length, 9 inches ; culmen, 0·85 ; wing, 8·0 ; tail, 3·8 ; tarsus, 1·3.

Adult Female.—Similar to the male. Total length, 10 inches ; culmen, 0·95 ; wing, 6·5 ; tail, 3·8 ; tarsus, 1·35.

Winter Plumage.—Like the summer plumage, but rather browner, and not quite so grey.

Young Birds.—Resemble the adults, but have sandy-rufous edges to the feathers of the upper surface.

Range in Great Britain.—The Kill-deer Dotterel is said to have occurred twice in England. The first one was recorded by Dr. Sclater in 1862, and was said to have been killed in April, 1857, near Christchurch, in Hampshire, on the authority of Mr. J. R. Wise. Another specimen was shot by Mr. Jenkinson at Tresco, in the Scilly Isles, on the 15th of January, 1885.

Range outside the British Islands.—This species is found generally over temperate North America in summer, migrating south in winter to Central America and the Antilles, and passing to South America as far as Peru and Chili.

Habits.—The common name of the Kill-deer Plover is derived from its note, *kildeer* or *kildee*. Mr. D. G. Elliott, in his recently published work on "North American Shore Birds," writes: "It passes nearly all its time on the ground, walks and runs with ease and considerable grace, and is constantly in motion, uttering its plaintive cry, which resembles syllables which form its trivial name. It likes to linger around pools and the banks of streams, and feeds upon worms, insects, larvæ, and small crustacea, and is often seen running over ploughed ground in search of whatever insects may have been disclosed in the upturned soil. While usually rather tame and gentle, it nevertheless resents man's appearance on its territory, and continually utters its complaining note, running before him, stopping to take observations, or flying short distances. When on the wing it is a beautiful object, the clear, harmonious-contrasting colours of its plumage making it very attractive to watch, as on firm wings it circles around in easy flight. In autumn it is often most numerous near the sea-shore, but I do not remember ever to have seen it actually on the beach. Walking quietly over the meadows or fields thinking nothing of birds, and none being in sight, one is often startled by this Plover rising suddenly from almost beneath one's feet, with frequent repetitions of its shrill cry, the last syllable sounded in rapid succession—*dee, dee dee dee*—as though it had no time, in its excitement, to utter the full sound, *kill-dee*. At such times it flies often in an erratic course for quite a distance, and low over the ground, as if to entice its disturber to follow it, and acts as if its nest was near, although the breeding season may have long since passed. It is a noisy bird, and serves on many occasions as a sentinel, and gives alarm to other species not so watchful of approaching danger. On this account it is not looked upon with favour by sportsmen, who may be endeavouring, with well-executed whistling, to lure other waders to their place of concealment. Like the Golden Plover and others of the tribe, it frequently stands motionless watching the object of its suspicions, and then running quietly away or rising with shrill cries, informing every other bird within hearing that it is time to be off from that particular locality. Frequently the Kili-deer remains all winter in some of the Middle States if the weather is not too severe, but when migrating it travels chiefly at night, often at a great height, announcing its presence by its clear, plaintive note sounded amidst the stars."

Nest.—A depression in the ground, sometimes lined with grass.

Eggs.—Four in number; cream-coloured, spotted thickly with blackish-brown; sometimes the ground-colour is of a brownish-drab, and the spots rather small. Axis, 1·5 inch; diam., 1·15.

THE SAND-PLOVERS. GENUS ÆGIALITIS.

Ægialitis, Boie, Isis, 1822, p. 558.
Type, *Æ. hiaticola* (Linn.).

The species of this genus are of small size, cosmopolitan in their range, and most of them decorated with a black frontal band. The characters of the genus *Ægialitis* are the same as those of *Oxyechus*, excepting that the tail is shorter and more square and is not equal to half of the wing in length. Eighteen species are known, some of them breeding in the high north of both hemispheres, while many are quite tropical in their habitat. As a rule, however, the Sand-Plovers are migratory birds, and leave their breeding-grounds in autumn.

I. THE RINGED SAND-PLOVER. ÆGIALITIS HIATICOLA.

Charadrius hiaticula, Linn. Syst. Nat. i. p. 253 (1766); Macgill. Brit. B. iv. p. 116 (1850).

Ægialitis hiaticula, Dresser, B. Eur. vii. p. 467, pl. 525 (1876); B. O. U. List Brit. B. p. 159 (1883); Saunders, ed. Yarr. Brit. B. iii. p. 257 (1883); id. Man. Brit. B. p. 523 (1889); Lilford, Col. Fig. Brit. B. part xx. (1891.)

Charadrius hiaticula major, Seebohm, Hist. Br. B. iii. p. 20 (1885).

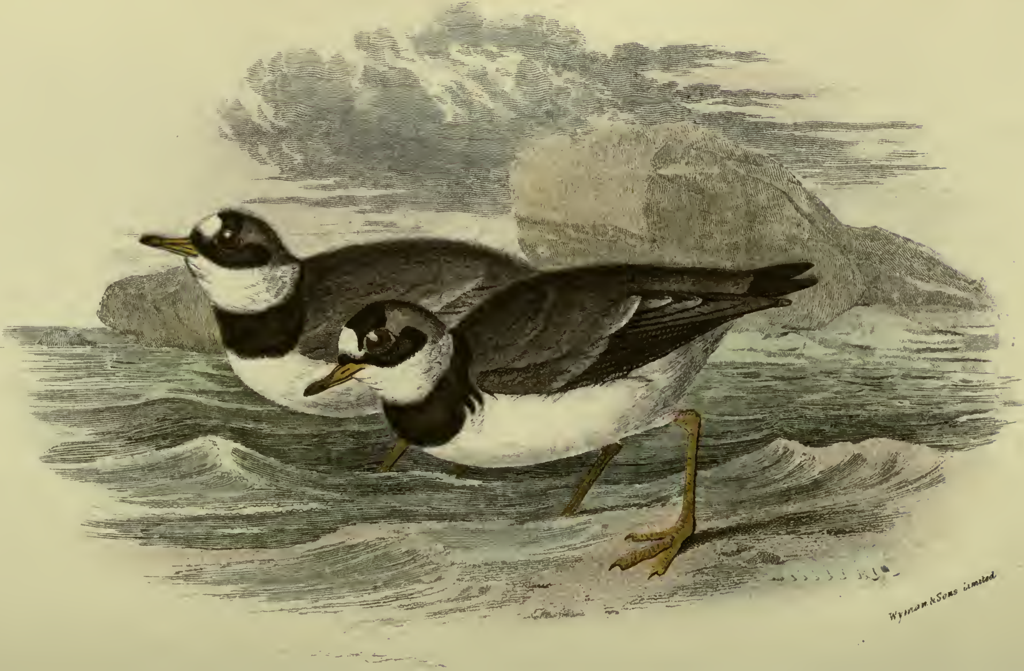
Ægialitis hiaticola, Sharpe, Cat. B. Brit. Mus. xxiv. p. 256.

(*Plate LXXVIII.*)

Adult Male.—General colour above light brown; wing-coverts like the back, the greater series tipped with white; quills brown,

PLATE LXXVIII

BAILLIE'S INSTITUTION GLASGOW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RINGED PLOVER.

the primaries dark brown on the outer webs and round the tips, with more or less white towards the base of the inner webs; the shafts white, increasing in extent on the inner ones, and forming a distinct patch on the outer web; the inner secondaries pure white, the innermost long secondaries brown like the back; lateral upper tail-coverts white, the centre ones brown, like the back; tail-feathers pale brown, tipped with white, with a sub-terminal black bar, the white increasing towards the outer feathers, the penultimate one being white with a pale brown inner web and a narrow black sub-terminal bar; the outermost tail-feather pure white; crown of head pale brown, separated from the white frontal band by a broad band of black; a narrow line across the base of the forehead; lores, sides of face, and ear-coverts black, with a narrow white stripe from above the fore part of the eye to above the ear-coverts; cheeks and sides of neck white, continued in a collar round the hind-neck, followed by an ill-defined blackish collar across the upper mantle; under surface of body pure white, with a black collar across the fore-neck, widening on the sides of the chest; under wing-coverts and axillaries white, the lower primary-coverts pale ashy like the quill-lining; bill black at the end, orange for the rest of its extent; feet orange; claws black; iris brown. Total length, 7 inches; culmen, 0·7; wing, 5·1; tail, 2·3; tarsus, 1·05.

Adult Female.—Not distinguishable from the male. Total length, 7·7 inches; wing, 5·1.

Young.—Paler than the adults, and distinguished by the pale margins of ashy-buff to the feathers of the upper surface; ear-coverts brownish-black; no black band on the fore part of the crown; the white forehead and eyebrow tinged with buff; band on the fore-neck brown, tinged with buff in the middle, the sides of the collar blackish.

Range in Great Britain.—The Ringed Sand-Plover is found on all the coasts of Great Britain, and breeds everywhere on the beaches. It is also found on the shores of inland lakes, and on migration has been known to occur on wild commons and the banks of rivers far away from the sea. The resident Ringed Sand-Plover of England is a somewhat larger bird than the form inhabiting the continent of Europe, and the late Mr. Seebohm separated it as a distinct race under the name of *Æ. major*, but I have found that the size of individuals in this species varies greatly, and that it is impossible to recognise this larger race as distinct. Small specimens of Ringed Sand-Plovers often occur on our southern coasts, and are, doubtless, migrants from the continent of Europe.

Range outside the British Islands.—The present species is spread over Europe generally, and extends very far north, having been found on Jan Mayen and to the north of Spitsbergen, while it also occurs in Greenland up to 70° N. lat., and in Cumberland Gulf on the opposite coast of America. It extends eastward as far as Lake Baikal, and breeds rarely in Turkestan. Stragglers are found in North-western India, but the bulk of the individuals which migrate from northern latitudes visit Africa during our winter, and range even to the Cape of Good Hope. Occasional instances have been noted of the occurrences of the Ringed Sand-Plover in America, but a single record for Australia is not reliable.

Habits.—A common local name for this species is the "Sand Lark," but near Sidlesham and Pagham, in my younger days, the favourite name was "Wide-a-wake," and the local gunners called this bird by the latter name on account of its exceeding wariness, and that this is its true quality must have been experienced by anyone who has tried to approach the bird in autumn. During the breeding season they are more easily obtained, on account of the great solicitude they evince for their nest, and more particularly for their young. Although in August and September they may be seen feeding on the mud-flats, either singly or in pairs, they are often in company in flocks of Dunlins, especially when the latter resort to the sea-beach to rest during the time that the tide in the harbour is full. On these occasions if the collector tries to stalk the Dunlins he will see the flock engaged in quietly preening their feathers or dozing away the time until the tide recedes and the mud-flats are uncovered. Should he come too near, the first sign of movement will be the active running of a little "Wide-a-wake," who trots about near the quiescent Dunlins, uttering at times his piping note of alarm, and as a rule he succeeds in arousing a whole flock, and leading them out to sea.

Away they fly, a little black band, just skimming the waves, with the Sand-Plover well ahead, and guiding them to a safer resting-place a little farther down the coast. I have known this occur so often that the "Wide-a-wake" was never a great favourite with us in the old shooting days of Pagham Harbour.

The habits of the species at the nesting season have been well described by "The Son of the Marshes": "No bird that I am acquainted with shows more anxiety for its eggs and young than the bird under notice. It is this extreme anxiety that betrays their presence; you hear a plaintive whistle, and the bird flits in front of you, settles down, and pipes. There it is, there it is, you can see it as plainly as if you had it in your hand. It runs a yard or two away, then turns and comes towards you as if it meant to run close up to your feet; stops short, looks at you intently, with its full dark eyes, and pipes softly, as if to say, 'Don't come any nearer.' But we do, for we feel inclined to see some perfect acting on this proficient little creature's part.

"There it goes, one leg broken and a wing tipped; now both wings are crippled, and it tries to raise its useless wings, but all to no purpose; it drops on its breast, throws its head, with the eyes half closed, as much as to say 'I'm done for.' Nothing of the kind; it scuffles out of sight somehow, and you pass on. Presently you see a wounded bird trying to keep from falling; it is no use, for the poor creature drops, spreads out its tail and wings, as some species do at the last gasp, and lies there, to all appearance dead. It is nothing but sheer humbug, the whole of it; on a near approach the bird shoots up and away, piping in the most cheerful and contented manner: these consummate arts have only been gone through to lure you away from the vicinity of its eggs or young. You might, in fact, be standing over a nestling and not see it unless the toe of your boot caused the tiny creature to move from where it had squatted; when the young are alarmed they scatter out."

Nest.—None, as a rule, being merely a hollow scooped in the sand, though sometimes the bird takes advantage of a natural depression. Colonel Feilden has recorded an instance in which the nest was lined with the green fleshy leaves and stems of *Atriplex littoralis*.

Eggs.—Four in number, pear-shaped, and of a creamy-buff to a clay-coloured ground, with small blackish spots and lines, sometimes forming small blotches near the larger end of the egg; the underlying spots purplish-grey, very small and scarcely visible. Axis, 1·3–1·5; diam., 0·9–51·05.

Mr. Robert Read says that he has noticed that the eggs of this bird vary considerably in the ground-colour, according to locality, those laid on the dark pebbles near inland lakes and rivers being much duller than those laid on the bright yellow sea-sand. As far as my experience goes, the eggs, though laid in a sandy hollow, are generally surrounded by pebbly beach, many of the stones of which so nearly resemble the eggs themselves as to make the latter very difficult to find.

II. THE LITTLE RINGED SAND-PLOVER. ÆGIALITIS DUBIA.

Charadrius dubius, Scop. Del. Faun. et Flor. Insubr. ii. p. 93 (1786).
Charadrius minor (W. & M.), Macgill. Brit. B. iv. p. 128 (1850); Seebohm, Brit. B. iii. p. 16 (1885).
Ægialitis curonicus (Gm.), Dresser, B. Eur. vii. p. 491, pl. 524 (1876); B. O. U. List Brit. B. p. 159 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 262 (1883); id. Man. Brit. B. p. 525 (1889); Lilford, Col. Fig. Brit. B. part xxx. (1895).
Ægialitis dubia, Sharpe, Cat. B. Brit. Mus. xxiv. p. 263 (1896).

Adult Male.—General colour above light brown, a little darker on the rump and central upper tail-coverts; sides of rump and lateral upper tail-coverts pure white; wing-coverts like the back, the feathers round the bend of the wing darker brown; primary quills blackish, internally lighter brown, with dark shafts to all the primaries except the first, which is white; secondaries dusky, lighter and more ashy-brown internally; inner secondaries smoky-brown, with a good deal of white on both webs, the long inner secondaries like the back; tail-feathers ashy-brown, tipped with white, and with a broad sub-terminal black bar, the outer feathers more distinctly edged with white, the two outermost almost entirely white, with a black patch on the inner web corresponding to the sub-terminal bar on the rest of the feathers;

base of forehead, lores, feathers above and below the eye, and ear-coverts black; a broad frontal band of white, followed by another band of black above the eye, which is again succeeded by another black line, which widens out above the eye and forms a distinct eyebrow; hinder crown as far as the nape ashy-brown; round the neck a broad white collar, continuous with the white throat, and followed by a broad band of black on the lower hind-neck, continued right across the fore-neck, and widening out on the sides; cheeks, throat, and under surface of body pure white, including the under wing-coverts and axillaries; bill dusky-black; feet flesh-colour; iris dusky-brown; rim round the eye bright yellow. Total, 6·8 inches; culmen, 0·6; wing, 4·6; tail, 2·35; tarsus, 1·0; middle toe and claw, 0·8.

Adult Female.—Similar to the male, but with the markings not so well developed, especially the black markings of the face and the bands on the hind-neck and fore-neck, the latter being much mixed with brown; bill black; feet pale flesh-colour; iris dark brown; ring round the eye bright yellow. Total length, 6·5 inches; wing, 4·6.

Young.—Differs from the adult in wanting the black on the head as well as the black collars on the mantle and fore-neck. The general tone of the plumage is more rufescent than in the adults, and the whole of the upper surface is varied with wavy lines of pale sandy-buff, before which a sub-terminal dusky bar; the forehead is pale sandy-buff; ear-coverts dusky-blackish. The collar on the fore-neck is composed of brown feathers, generally with a tinge of sandy-buff on the throat. The black markings on the head and the black collars are gained by a moult in the following spring. There appears to me to be also a change of feather, especially on the neck-collar.

Characters.—The Little Ringed Sand-Plover is a decidedly smaller bird than the Ringed Sand-Plover (*Æ. hiaticola*), and has a black bill with only a little yellow on the base of the lower mandible. The wing does not exceed five inches in length. It can also be distinguished by the white shaft being found *only on the first primary.* This last character will serve to denote the species at all ages.

Range in Great Britain.—A rare visitor, of which Mr. Howard

Saunders only admits five occurrences to be authentic, most of the specimens referred to this species proving to belong to the small race of the Common Ringed Sand-Plover which visits our southern coasts. The five specimens above alluded to are as follows:—One in the collection of the late Mr. Doubleday, from Shoreham, in Sussex; a second in Mr. Borrer's collection, from Chichester Harbour; a third in the collection of the late Mr. Rodd, from Tresco, in the Scilly Islands; and two young specimens shot by Mr. Mitford and Mr. J. E. Harting at Kingsbury Reservoir. Mr. Borrer's specimen was procured in May, but the others have occurred in August and October. A sixth specimen is in the Seebohm collection in the British Museum, being an adult female killed by Mr. H. Rogers at Freshwater, in the Isle of Wight, in August.

Range outside the British Islands.—The Little Ringed Sand-Plover is distributed over the greater part of the Old World, nesting in the temperate parts of Europe and Asia, and wintering in Africa, the Indian Peninsula, and the Malayan Archipelago, extending even to New Guinea and the Islands of the Bismarck Archipelago. The species has been obtained in the Færoes, and even in Iceland; and it breeds sparingly in Scandinavia, but plentifully in Germany and Poland in suitable places, as well as in certain parts of France and the Mediterranean countries. It has been said to occur accidentally in North America.

Habits.—According to Mr. Seebohm, the Little Ringed Sand-Plover prefers the banks of rivers and inland sheets of water to the sea-shore. On the latter it seems to be rarely met with. It delights in the sandy beds of rivers, especially those which are shallow and contain many sand-banks and dry pebbly stretches, where it can find its food and rear its young. He found it not uncommon on the banks of a half-dried-up river in Asia Minor, between Smyrna and the site of the ancient Sardis. It is found far inland, and occasionally frequents fallows and sandy plains at a considerable distance from water. In its habits it very closely resembles its congener, the Ringed Sand-Plover. Like that species, it is usually seen running hither and thither on the sands, close to the edge of the water, now and then taking short flights just above the ground, or standing motionless for a few moments. It is rather more shy than its larger ally, and takes wing more readily. In its flight it is very similar to the Ringed Sand-Plover, but its notes are very different from that of its near allies. Its ordinary call-note is a loud, clear, plaintive, and monotonous *pee*, almost lengthened into two syllables. When alarmed the note is pronounced much shorter, and repeated more rapidly; and in spring it is uttered still more rapidly so as to become continuous, especially at the close of its love-song, when it becomes a trill.*

Mr. Dixon says that, in Algeria, he has seen the male soaring into the air like a lark, and flying about for a considerable time, uttering his peculiar love-song, soaring higher and higher above the sandy wastes, and then gradually descending again.

Nest.—None, being merely a little cavity in the sand, with a slight lining. Mr. Robert Read writes to me: "Although the species breeds sparingly in Sweden, I was fortunate enough to discover two nests there in June, 1894. Both were in small patches of shingle on islands in a large fresh-water lake. In the first case the bird flew off as our boat approached the island, and I found the nest with four fresh eggs. In the second instance I saw the bird running off just as the boat touched the shore, and I found the nest with four eggs about a week incubated. In both cases the slight hollows in the shingle, which did duty for nests, were lined with dried grass, sticks, and stalks, which is very unusual with *Æ. hiaticola.* The latter, when an intruder is in the vicinity of its nest, usually keeps not far off, uttering a monotonous, plaintive whistle; but in neither of the above instances did I hear any note of the birds after they left the nest."

Eggs.—Four in number, pear-shaped, and laid point to point. The ground-colour is clay-buff to a sort of greenish-grey. The blackish markings are similar in character to those of *Æ. hiaticola*, and the underlying spots are just as indistinct. The size of the egg is considerably smaller than that of the eggs of the Ringed Sand-Plover. Axis, 1·1–1·25 inch; diam., 0·8–0·9.

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* Seebohm, Hist. Brit. B. iii. pp. 17, 18.

III. THE KENTISH SAND-PLOVER. ÆGIALITIS ALEXANDRINA.

Charadrius alexandrinus, Linn. Syst. Nat. i. p. 258 (1766).
Charadrius cantianus (Lath.), Macgill. Brit. B. iv. p. 125 (1852); Seebohm, Hist. Brit. B. iii. p. 25, pl. 26, figs. 7–9 (1885).
Ægialitis cantianus, Dresser, B. Eur. vii. p. 483, pl. 523 (1876); B. O. U. List Brit. B. p. 158 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 267 (1883); id. Man. Brit. B. p. 527 (1889); Lilford, Col. Fig. Brit. B. part xxx. (1895).
Ægialitis alexandrina, Sharpe, Cat. B. Brit. Mus. xxiv. p. 275 (1896).

Adult Male.—General colour above pale earthy-brown, with faint remains of paler margins to the feathers; wing-coverts like the back, the marginal ones blackish-brown, the greater series darker brown, with a narrow white edging to the tip; bastard-wing and primary-coverts dark sepia-brown, the latter fringed with white at the tip; quills sepia-brown, with white shafts to the primaries, which are pale brown on the inner web, the inner primaries for the most part white towards the base of the outer web; the secondaries dusky-brown with white tips, the inner ones also white along the margins of both webs, the innermost long secondaries brown like the back; lower back, rump, and upper tail-coverts dark sepia-brown, the lateral ones white, forming a patch on each side; the four centre tail-feathers dark sepia-brown, paler towards the base, and having white shafts to the centre ones, the three outer feathers white, the next ones smoky-brown with white shafts; crown of head ashy-brown, washed with light tawny rufous, especially distinct towards the nape; hind-neck and sides of neck white, forming a collar; forehead and a distinct eyebrow white, with a broad black band separating the white of the forehead from the brown of the crown; eyelid and loral streak black; feathers below the eye and sides of face white, with a black patch on the hinder ear-coverts; cheeks and under surface of body pure white, with a patch of black on each side of the chest; under wing-coverts and axillaries white; quills below light ashy, like the lower primary-coverts; bill black, with the base of the lower mandible of a dusky flesh-colour; tarsi dusky, toes darker, claws black; iris brown. Total length, 6·5 inches; culmen, 0·7; wing, 4·15; tail, 1·7; middle toe and claw, 0·7.

Adult Female.—Similar to the male, but with less rufous on the head, this being represented by a tinge over the eye and round the nape, the black band on the fore part of the crown absent, the black patch on each side of the chest represented by a brown patch with a rufous tinge. Total length, 6·5 inches; culmen, 0·7; wing, 4·3; tail, 1·9; tarsus, 1·1.

Adult in Winter Plumage.—Differs from the summer plumage in the entire absence of bright rufous on the head, and the black markings on the face and sides of the breast are also not developed. The head is like the back; the forehead and eyebrow are white, the lores dusky, and there is always a more or less distinct white collar united to the two sides of the neck.

Young Birds in First Winter Plumage.—Only differ from the adults in having the whole upper surface distinctly marked with pale edges to the feathers.

Characters.—The Kentish Sand-Plover may be recognised at all ages by its black legs and feet. The crown of the head in the adult birds is rufous as well as the nape; round the hind-neck is a white collar. On the sides of the breast is a black patch, which does not meet across the fore-neck to form a collar. In the young birds the black legs and white collar on the hind-neck are the best characteristics.

Range in Great Britain.—The present species is a migrant to England, especially to the south-eastern counties, arriving in April, and leaving at the end of September. It has also been obtained on the east coast in October; but, as Mr. Howard Saunders points out, such birds are probably migrants from the Continent. It it chiefly known as an inhabitant of the shingly beaches of Kent and Sussex, but is much less plentiful now than formerly. It has been met with, on rare occasions, in Devonshire and Cornwall, and is a very scarce visitor to Ireland. It is plentiful, however, on some of the Channel Islands.

Range outside the British Islands.—The Kentish Sand-Plover is spread over the greater part of the Old World, but does not range very far north, being rare in the Baltic, but more common in Denmark and the Netherlands; it has occurred once in Norway, but is found regularly in South Sweden. In France, Spain, and the Mediterranean countries it is found in suitable localities, both inland and near the sea-shore; and it extends eastwards through Central Asia to China and Japan. It winters in Africa, India, and the Malayan countries as far as Australia. Some of the African and Indian birds are smaller than our ordinary Kentish Sand-Plover, and have been separated by Mr. Seebohm as *Æ. minutus*. The Chinese form of this Sand-Plover is usually found to have pale legs, and have been described as a distinct species, *Æ. dealbatus*, but after careful study of both of these forms, I have come to the conclusion that they cannot be separated from *Æ. alexandrina*.

Habits.—Before the enclosure of the harbours at Romney and Pagham, I made the acquaintance of the Kentish Sand-Plovers in considerable numbers. At Pagham they were always rare, and I only collected single specimens, mostly immature birds; and in this part of Sussex I never found it breeding. In the neighbourhood of Romney, however, and along the Lydd beach to Dungeness, and thence to Rye, I have often met with the species, and a certain number still breed in this district, though their numbers have been decreased by the zeal of collectors; and the artillery practice, now indulged in, must have disturbed them and the Stone-Curlews not a little.

In the spring and summer the birds keep in pairs, and are not in any sense gregarious. The generally whiter look of the species easily distinguishes it from the Ringed Sand-Plover, which is found on the same shingles, but is not so common as the Kentish Sand-Plover. The nest is by no means easy to find, and the search is rendered more difficult by the way in which the bird runs away from it for some distance before taking wing. A little experience, however, in watching the female bird, and the remembrance that, when first seen running, she must already be many yards from the actual nest, will lead the collector to trace backwards, and a little care will end in the discovery of the eggs. The male generally flies for some little distance, and perches, a conspicuous object, on some raised shingle or patch of mossy grass, when he constantly utters his piping note. The female, with much more apparent caution, runs crouchingly for some ten yards, then stops, and again runs on in the same conspicuous manner until she thinks that she has drawn the intruder far enough away from the eggs or the young to ensure the safety of the latter.

The nestlings themselves are adepts at hiding, their mottled plumage closely resembling the variegation of their stony surroundings. If the observer walks erect the chances of discovering the nestlings are small indeed, even if he knows that the little ones are running away from him; for it is almost impossible to perceive them above. I have, however, captured several nestlings by resting my head on the shingle, when the little creatures become distinctly visible against the sky-line, as they run along with wonderful swiftness for such tiny objects. I could never bring myself to kill any of these fluffy little balls of down, with their great dark eyes and abnormally long legs; and later in the autumn I have been rewarded by seeing flocks of Kentish Sand-Plovers feeding on the green herbage which skirts the harbours after the tide has receded. I once saw, from behind my shelter of a mud-bank, more than forty of these pretty birds feeding on the green moss near Romney Hoy, and a more interesting sight can scarcely be imagined.

Nest.—None, the eggs being laid in a little depression of fine sand, occasionally the hollow being deep enough for the eggs to stand almost upright; they have also been found on heaps of sea-weed.

Mr. Robert Read sends me a note on his experiences:—"The eggs of the Kentish Sand-Plover are, in my opinion, the most difficult eggs of any of the Plover family to discover, at all events in this country. Without watching the bird and marking it down on to its nest it is impossible to find the eggs. Once, after watching a bird through my field-glasses for more than three hours, I at length discovered a tiny fluffy young one crouching amongst the shingle, and only with the greatest difficulty distinguishable from its surroundings. Later on I was fortunate enough, after only about fifteen minutes' watching, to discover a second nest with three fresh eggs. They were laid on the bare shingle without the slightest pretence of a hollow, much less of a nest, and so closely did their ground-colour and markings assimilate to the colour and weather-stained markings on the pebbles that even when standing within six feet of them, if one took one's eyes off for a moment, it required a very careful scrutiny before they could be again recognised. I have never known more than three eggs to be found in one nest."

Eggs.—Three or four in number (usually three), pear-shaped, and laid point to point. In character the eggs are very similar to most of the Ringed Sand-Plovers, at least as regards the ground-colour. The black markings are, however, much more plentiful, forming larger blotches, and they are also more equally distributed over the egg. Axis, 1·2–1·4 inch; diam., 0·85–0·95.

THE LAPWINGS. GENUS VANELLUS.

Vanellus, Brisson, Orn. v. p. 94 (1760).
Type, *V. vanellus* (Linn.).

The Lapwings belong to a section of the Plovers in which the wings are not long and pointed as in those species which we have been last considering, but are very broad and rounded, the secondaries, in flight, being nearly as long as the primaries. These birds have, in consequence, a much slower and more heavy mode of flight than the pointed-winged Golden Plover or the Sand-Plovers. The present genus contains but a single species, which is remarkable for its long and recurved crest of narrow pointed plumes, but it has no spur on the wing or wattle on the face, like so many of the tropical Crested Plovers.

I. THE LAPWING OR PEEWIT. VANELLUS VANELLUS.

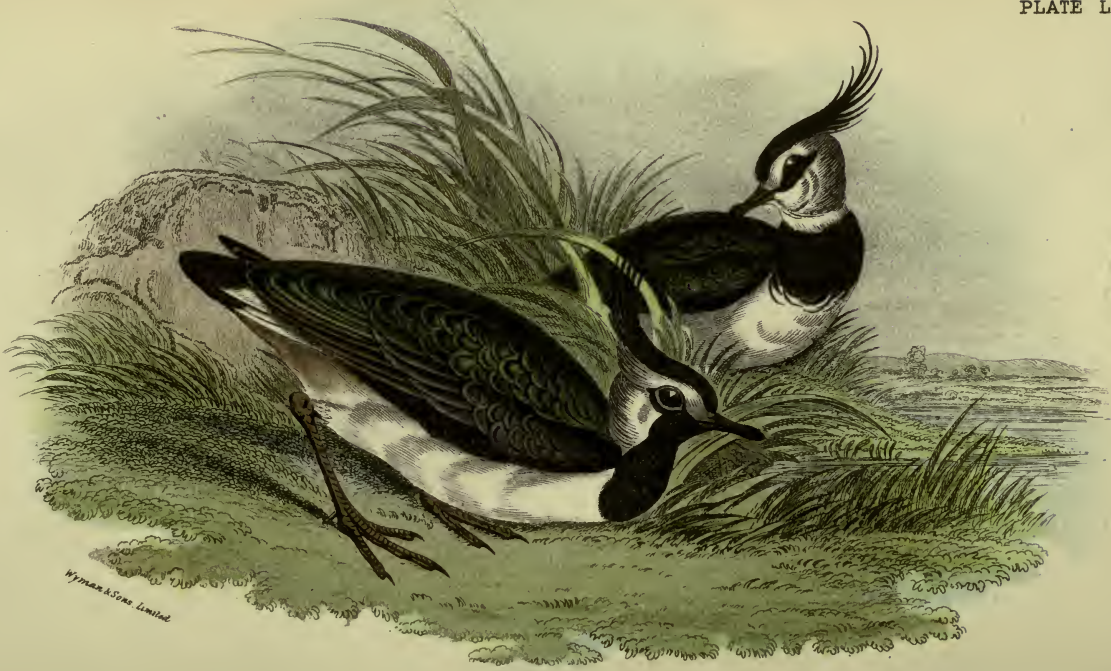
Tringa vanellus, Linn. Syst. Nat. i. p. 248 (1766).
Vanellus cristatus, W. & M.; Macgill. Brit. B. iv. p. 133 (1852); Seebohm, Hist. Brit. B. iii. p. 57 (1885).
Vanellus vulgaris, Bechst.; Dresser, B. Eur. vii. p. 545, pl. 531 (1875); B. O. U. List Brit. B. p. 161 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 283 (1883); id. Man. Brit. B. p. 539 (1889); Lilford, Col. Fig. Brit. B. part xix. (1891).
Vanellus vanellus, Sharpe, Cat. B. Brit. Mus. xxiv. p. 166 (1896).

(*Plate LXXIX.*)

Adult Male.—General colour above glossy olive-green, the scapulars purple at their tips; wing-coverts glossy steel-blue, with a greenish shade, more conspicuous on the median series; quills black, the primaries with a sub-terminal patch of ashy-white, the secondaries white at the base of the inner web, the innermost secondaries glossy green; lower back and rump

PLATE LXXIX.

BAILLIE'S INSTITUTION GLASGOW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LAPWING.

dusky-brown, the latter slightly glossed with green; upper tail-coverts cinnamon-rufous; base of tail white, terminal half black, the feathers being slightly tipped with white, the black band decreasing in extent towards the outer feathers, which are entirely white, excepting a black patch on the inner web; crown black, with a slight greenish gloss and ornamented with an occipital crest of elongated plumes; lores, fore part of cheeks, entire throat, and fore-neck black, with a slight greenish gloss; eyebrow, sides of face, sides of neck, and hind-neck as far as the occiput dull white, the eyebrow mottled with black above the eye, and below the latter a narrow streak of black extending along the upper edge of the ear-coverts; hind-neck slightly washed with brown, the lower sides of the neck metallic-green, extending down the sides of the fore-neck; remainder of under surface of body, from the fore-neck downwards, pure white, including the under wing-coverts and axillaries; the coverts on the outside of the wing as well as the lower primary-coverts black, like the quill-lining; under tail-coverts light cinnamon; bill black; feet clear fleshy-red; iris brown. Total length, 13 inches; culmen, 1; wing, 8·8; tail, 4·2; tarsus, 1·7.

Adult Female.—Similar to the male in colour, but the crest not so long, and the black on the throat not developed so soon. Total length, 11 inches; culmen, 1·1; wing, 8·5; tail, 3·8; tarsus, 1·6.

Winter Plumage.—Differs from the summer plumage in having the throat white and the head brown, with the crest shorter; across the fore-neck a very broad band of black; feathers of the upper surface with fulvous edgings, which gradually wear off.

Young.—Coloured like the adults, but having all the feathers of the upper surface edged with sandy-buff, including the wing-coverts and secondaries, the scapulars with a little purplish gloss; the crest very short; the eyebrow and sides of face and throat washed with sandy-buff, with black marks before the eye, on the fore part of the cheeks, and upper line of the ear-coverts.

Range in Great Britain.—The Lapwing is found everywhere throughout our islands, and while diminishing in some localities, owing to the increase of drainage and cultivation and the taking of its eggs in large numbers, the species in some parts of Scotland is on the increase.

Range outside the British Islands.—The Lapwing is found throughout the whole of Europe and Northern Asia, nesting even in the Mediterranean countries. In Europe it breeds as far as the Arctic Circle, and in Asia up to 65° N. lat. In winter it extends to Northern Africa, North-western India, and Southern China.

Habits.—In the open and marshy countries which this species loves to frequent the musical note of the Peewit is a distinctive feature. It is also to be heard on the moors and pasture-lands, especially on the fallow ground. Although this Plover is to be seen at all times of the day, it becomes much more active towards evening, and feeds a great deal during the night. Throughout the summer it is a faithful friend to the farmer, and devours large numbers of grubs, slugs, &c. It is, therefore, a most useful bird to keep in a garden, where its usefulness and beauty greatly commend themselves, but it is said that the Peewit is an irresistible attraction to any prowling cat. In the winter the flocks of Peewits betake themselves to the sea-shore, where they feed on marine insects and small molluscs, and it is a beautiful sight to see a large flock of these birds winging their way seawards as evening approaches. They often go through some aërial evolutions, their white breasts being very conspicuous as they turn towards the setting sun, while the whole flock seems to disappear for an instant as they wheel away from the light of the latter.

The Peewit is at all seasons more or less gregarious, but more decidedly so in winter. It nests in scattered colonies, and, as is well known, its nests are much harried for the sake of the eggs, which are greatly esteemed as an article of food. The eggs are never very easy to discover, and would be still more difficult to find were it not for the anxiety which the birds evince when any intruder approaches the nests or young birds. They fly round and round, uttering a continued note of *pee-a-weet-a-weet.* The downy young are very difficult to discover, as their plumage so closely harmonises with their surroundings, while the attention of the observer is generally called off by the unhappy parent birds, who tumble and flutter about as if wounded.

Nest.—Generally placed in a natural hole or depression, such as the footprint of a horse or cow, but sometimes a tussock of grass may be selected. Of actual nest there is scarcely any, but a slight lining of grass or heather is sometimes made.

Eggs.—Usually four, but on very rare occasions five have been found. Mr. Seebohm gives one instance of a clutch of five having been obtained by the Rev. H. A. Macpherson; while, as will be seen below, Mr. Robert Read records a similar occurrence. The latter gentleman writes: "Although the eggs of this bird are taken in such enormous numbers, I have never but once known five eggs to be taken in one nest. This was in Northumberland. I have found the Peewit breeding quite close to London, at Ealing. Near Glasgow I obtained a set of three eggs with the heavy markings at the small end, an unusual variety of this bird's eggs. In autumn, quite close to Glasgow, I have counted about 8,000 Peesweeps in one field." The ground-colour of the Lapwing's egg varies extremely, from dusky-olive or greenish-brown to dark clay-colour or clay-brown, with black blotches and smaller spots distributed over the egg, the larger blotches congregating near the larger end. The underlying spots are of a dark purplish-grey. Axis, 1·75–1·9 inch; diam., 1·25–1·35.

THE CRESTLESS LAPWINGS. GENUS CHÆTUSIA.

Chætusia, Bp. Iconogr. Faun. Ital. Ucc. Introd. p. 17 (1841).
Type, *C. gregaria* (Pall.).

This genus, of which only one species is known, is in every respect a true Lapwing, but differs from the genus *Vanellus* in having no crest.

I. THE SOCIABLE LAPWING. CHÆTUSIA GREGARIA.

Charadrius gregarius, Pall. Reis. Russ. Reichs, i. p. 456 (1771).
Chettusia gregaria, Dresser, B. Eur. vii. p. 527, pl. 528 (1875); Sharpe, Cat. B. Brit. Mus. xxiv. p. 174 (1896).
Vanellus gregarius, Saunders, Man. Brit. B. p. 537 (1889).

Adult Male.—General colour above pale ashy-brown, the centre of the lower back rather darker; sides of the lower back, lower rump and upper tail-coverts pure white, as well as the basal two-thirds of the tail, which is tipped with white, before which is a broad band of black, gradually diminishing in size towards the outer feathers, and entirely disappearing on the two outermost rectrices, which are entirely white; wing-coverts light brown, a little darker than the back, the greater series white, with brown bases; bastard-wing, primary-coverts, and quills black, the secondaries pure white, the innermost light ashy-brown like the back; forehead and a broad superciliary band encircling the nape, creamy-white; crown of head and nape black; lores and a streak behind the eye black; below the eye a line of white; cheeks and ear-coverts pale isabelline-brown, extending on to the sides of the neck and round the hind-neck, as well as over the throat; lower-throat, fore-neck, and breast dark ashy-brown or stone-grey; lower breast and abdomen black, with a patch of chestnut on the lower abdomen; lower flanks, thighs, under tail-coverts, under wing-coverts, and axillaries pure white; primaries black below; bill and feet black; iris dark brown. Total length, 12 inches; culmen, 1·3; wing, 8·0; tail, 3·5; tarsus, 2·35.

Adult Female.—Does not differ from the male in plumage. Total length, 12 inches; culmen, 1·25; wing, 7·8; tail, 3·4; tarsus, 2·35.

Young.—Differs from the adults in being rather darker brown, and in having sandy margins to the feathers of the upper surface; the head brown like the back; lores white; under surface of body white, with no black on the breast or red on the abdomen, and the chest mottled with black edgings to the feathers or with heart-shaped spots in the centre of the latter; bill black; feet black, very faintly tinged with lake in many specimens, though this colour is scarcely observable; iris blackish or very dark brown.

Range in Great Britain.—This species has only occurred once, as far as is known, within our limits. The history of the specimen in question is given by Mr. Howard Saunders as follows: "In the autumn of the year 1860, or thereabouts, an immature example of this south-eastern species was shot from among a flock of Lapwings near St. Michael's-on-Wyre in Lancashire, and having been subsequently placed in a case with many other stuffed birds, which impeded the view: it was erroneously recorded as a Cream-coloured Courser by Mr. F. S. Mitchell. It afterwards came into the possession of Mr. W. H. Doeg, when it was correctly identified, and was exhibited by Mr. Seebohm at a meeting of the Zoological Society of London on November 20th, 1888. Its pedigree appears to be perfectly satisfactory."

Range outside the British Islands.—The principal home of this species is in South-eastern Russia, in the steppes of the Don, the Volga, and the Caucasus, as well as the Crimea. The late Professor Bogdanoff gives its range as the steppes of Tchernozém, from 51 to 53° N. lat., and its eastern range as extending to the Aralo-Caspian region and Russian Songaria, whence it wanders in winter to North-western and Western India, and to Arabia and North-eastern Africa. It has occurred on more than one occasion in Western Europe, having been killed at least three times in Italy, as well as near Nice. Mr. Howard Saunders saw one in the Cadiz Market, in February, 1868, and the late Professor Taczanowsky identified two adults near Lublin in the autumn of 1842.

Habits.—Very little has been recorded about the habits of this species. Mr. Hume gives the following note of his observations in Sind: "This Lapwing was often met with, chiefly in waste places in the immediate neighbourhood of cultivation. As a rule it is an upland bird; you may see it occasionally near jheels, but is most common in the neighbourhood of cultivation on waste and dry uplands. It keeps together in flocks of from twenty to one hundred, and until shot at once or twice is fearless and tame." Colonel E. A. Butler also gives a short note: "The Black-sided Lapwing is very common during the cold weather in the neighbourhood of Deesa (farther south it is not so plentiful), congregating in flocks, varying in numbers from four or five to fifty or sixty. Like *Æ. cantianus* and *Æ. curonicus*, it frequents open sandy and grass maidans and bare cultivated or uncultivated ground."

Nest.—Apparently no details are known of the nidification of this species.

Eggs.—Four in number, very similar to those of the Lapwing, but the spots rather more sparsely distributed. The ground-colour is of an olive clay-brown, with black spots and blotches. Axis, 1·65–1·95 inch; diam., 1·25–1·35.

THE TURN-STONES. SUB-FAMILY ARENARIINÆ.

These curious little waders are distinguished by having the lower half of the tarsus plated or scaled transversely, while its hinder aspect is entirely reticulated. There is no "dertrum," or swelling, at the end of the bill as there is in most of the Plovers. The nasal groove does not extend for more than half the length of the culmen. Two species of Turn-stone are known, our own species, *A. interpres*, being found nearly all over the world, while the Black Turn-stone (*A. melanocephala*) is only known from Western North America, where it ranges from Alaska to California.

THE TURN-STONES. GENUS ARENARIA.

Arenaria, Brisson, Orn. v. p. 132 (1760).
Type, *A. interpres* (Linn.).

This is the single genus of the Turn-stones, and, therefore, the characters are the same as those of the Sub-family.

I. THE TURN-STONE. ARENARIA INTERPRES.

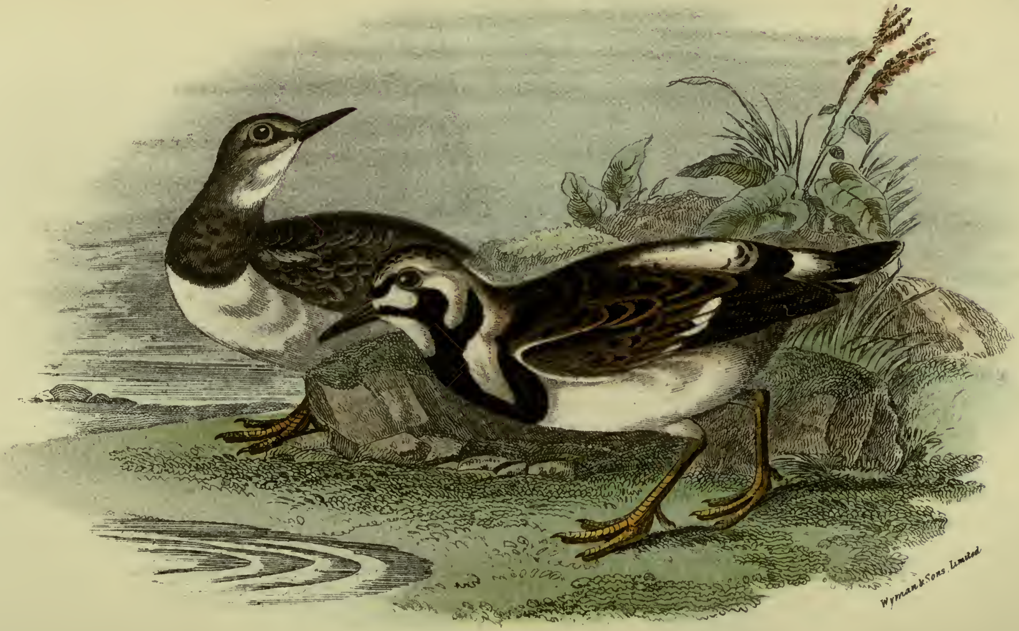
Tringa interpres, Linn. Syst. Nat. i. p. 248 (1766).
Strepsilas interpres, Macgill. Brit. B. iv. p. 143 (1852); Dresser, B. Eur. vii. p. 555, pl. 532 (1875); B. O. U. List Brit. B. p. 161 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 289 (1883); id. Man. Brit. B. p. 541 (1889); Lilford, Col. Fig. Brit. B. part xiv. (1890).
Charadrius interpres, Seebohm, Hist. Brit. B. iii. p. 12 (1885).
Arenaria interpres, Sharpe, Cat. B. Brit. Mus. xxiv. p. 92 (1896).

(*Plate LXXX.*)

Adult Male in Breeding Plumage.—General colour above black, mixed with chestnut, or partly chestnut, feathers on the centre of the mantle; scapulars for the most part chestnut, but the outer ones black at the ends, or irregularly marked with black,

PLATE LXXX.

BAILLIE'S INSTITUTION GLASGOW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TURNSTONE.

INSTITUTION

accessory scapular plumes white; entire back below the mantle and rump pure white; upper tail-coverts black, the longer ones pure white; lesser wing-coverts blackish, the innermost rather broadly edged with white, as also those near the edge of the wing; median coverts for the most part chestnut, slightly mottled with black; greater coverts blackish, narrowly margined and broadly tipped, with white; bastard-wing and primary-coverts black, the innermost of the latter with white tips; quills black with white shafts, and white bases to the inner primaries, the secondaries for the most part white, blackish towards the ends of the feathers, these black markings decreasing gradually towards the inner secondaries, some of which are pure white; the innermost secondaries black, mottled with chestnut, like the scapulars; tail-feathers black with white bases, all but the centre tail-feathers tipped with white, the black diminishing in size and forming a band towards the outer feathers, which are almost white; crown of head and hind-neck white, the former streaked, the latter mottled with black; base of forehead and narrow frontal-line black, followed by a band of white which unites with a broad eyebrow, and is extended over the ear-coverts; lores white, as well as the fore part of the cheeks; feathers round the eye and eyelid white, separated from the white loral patch by a narrow line of black, which joins the frontal-band to a square black patch beneath the eye, which is also joined with a malar line of black, which is connected with the sides of the neck and with the fore-neck and sides of breast, all these parts being black, but nearly divided by a semi-lunar band of white, which reaches from the sides of the neck almost to the breast; throat white, as also the rest of the under surface of body from the centre of the chest downwards; under wing-coverts and axillaries also pure white; quills below ashy-whitish along the inner web; bill black; feet deep orange-red, claws black; iris hazel. Total length, 8 inches; culmen, 0·9; wing, 6·2; tail, 2·3; tarsus, 0·95; middle toe and claw, 1·1.

Adult Female in Breeding Plumage.—Much duller than the male, and having the same pattern of black and white about the face; but never developing the same amount of chestnut about the back; the head and hind-neck being brown, mottled with blackish centres to the feathers. Total length, 8·5 inches;

culmen, 0·9; wing, 6·3; tail, 2·45; tarsus, 0·95; middle toe and claw, 1.

Young Birds.—General colour above dusky-brown, all the feathers edged with sandy-buff or rufous; wings and tail as in the adult; crown of head dark brown, streaked with sandy-buff, the margins of the feathers being of this colour; tail-feathers white, with a broad sub-terminal band of black, decreasing in extent towards the outermost feathers, all the feathers tipped with sandy-buff; throat and under surface of body white; the lower throat, fore-neck, sides of neck, and sides of breast mottled with dusky-blackish centres to the feathers, marking the black pattern of the adults, even the semi-lunar neck-band of the adults being indicated by a broad crescentic band of sandy-buff in the young.

Winter Plumage of the Adult.—Above nearly uniform dusky-brown, but not showing the tawny-rufous margins to the feathers of the upper surface, the edges being ashy-brown. The head is uniform brown like the back; the hind-neck and sides of neck are ashy, mottled with dusky centres to the feathers; sides of face brown, with more or less white on the ear-coverts; the black markings on the cheeks and throat as in the breeding bird, but the white semi-lunar band on the sides of the neck replaced by a patch of light brown.

The difference between the *winter plumage of the adult* and *the first full plumage of the young birds* consists in the sandy-buff margins to the feathers of the upper surface, which are very distinct in the latter at first. Afterwards they become abraded, and then there is scarcely any distinguishing mark between the winter plumages of the adult and young. In the spring the red plumage is very rapidly acquired, and I believe that it is gained quite as much by the change in the pattern of the feather as by a direct moult.

Range in Great Britain.—Although up to the present moment there is no authentic instance of the breeding of the Turn-stone in Great Britain, it is by no means improbable that the species does nest with us. Although a few remain during the winter in the milder parts of Southern England, the Turn-stone must be regarded as a migrant, principally in spring and autumn, on its way to and from its northern breeding quarters, coming north in May. The return journey lasts from the end of July to the end of September.

Range outside the British Islands.—The Turn-stone may be regarded as a circum-polar bird, for it breeds in the high north of both hemispheres, and wanders south in winter to the Cape of Good Hope, India and Ceylon, Australia, and the extreme south of South America. It has even been supposed to nest in some of its southern homes, as birds have been procured in full breeding plumage in the Azores, and in other places in May, but these are probably non-breeding birds, which remain in their southern homes during the whole of the summer. It nests regularly in Denmark and in Scandinavia, and on the Baltic coasts.

Habits.—This handsome little Plover is by no means shy, and, in autumn, the young birds may be approached within easy distance of observation. I have often seen them at this latter period of the year resting, at full tide, on the green herbage just beyond the high-water mark in some of our southern harbours. When sitting on the shingle, however, their plumage so completely harmonises with the surrounding stones that they are not discovered until they fly up, with a sharp note. It is essentially a bird of the sea-coasts, and is very seldom seen inland, although it is said to move across country in its migrations. Its name of Turn-stone is derived from its curious habit of turning over pebbles to look for the insects underneath, and Colonel Feilden has in his possession a slab of stone several inches square which he saw turned over by one of these birds. Edward, the Banffshire naturalist, noticed three of them engaged upon moving the body of a fish, which, as they could not overturn it, they undermined, and were then enabled to reach the insects which were underneath the body. Mr. E. W. Nelson also says that the species feeds upon the larvæ of the insects which are found upon the tens of thousands of seal carcases strewn about the Seal Islands in N.W. America. The call-note of the Turn-stone, writes Mr. Seebohm, is a clear, loud, shrill whistle, bearing some resemblance to the call-notes of the Golden and Grey Plovers, which may be represented by the syllable *kö* or *keet*. It has also a double note, which may be represented by the syllable *kitter*, and not unfrequently the single note is added, making a treble note, *kitter keet*. In spring, during the breeding season, it is said that these notes are often so rapidly uttered that they form a trill.

Nest.—A little hollow, lined with a few dead leaves, and generally concealed behind a bush or under some broad leaf, or a tuft of herbage.

Eggs.—Four in number; ground-colour of a pale greenish-grey to light clay-colour and olive-brown, the overlying spots being of a chocolate-brown, in some cases generally distributed over the egg, but in some clustered round the larger end. The underlying spots are distinct, and of a purplish-grey. Axis, 1·5–1·7 inch; diam., 1·05–1·2.

THE OYSTER-CATCHERS. SUB-FAMILY HÆMATOPODINÆ.

Like the Turn-stones, the Oyster-catchers have no swelling near the tips of the mandibles, in this respect differing from the True Plovers. The bill is very much compressed and narrow, the angle of the lower mandible being very strongly marked and situated not far from the base of the bill, its distance from the tip being double that from the base of the mandible. The tarsus is reticulated both in front and behind.

THE OYSTER-CATCHERS. GENUS HÆMATOPUS.

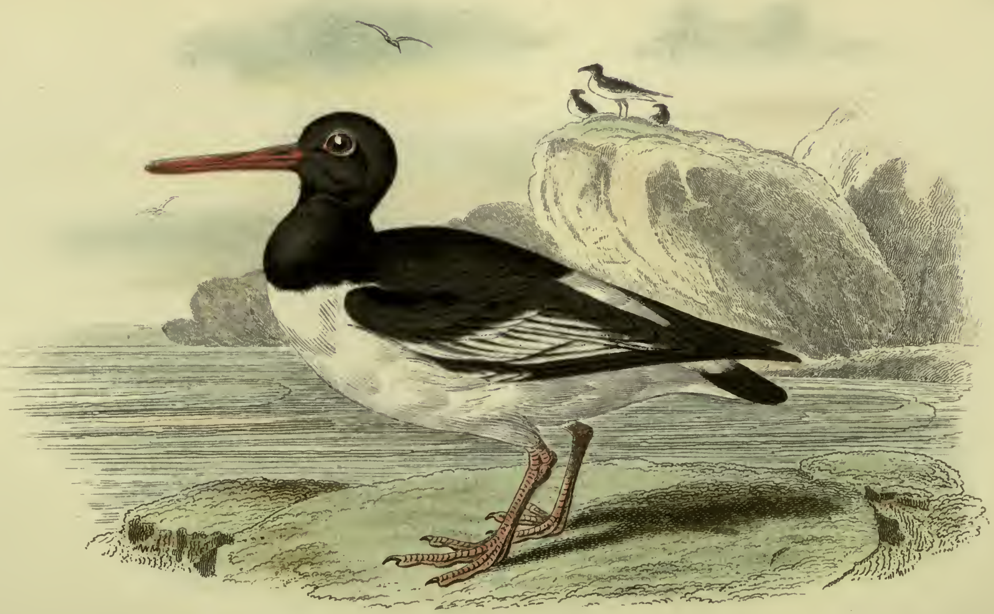
Hæmatopus, Linn. Syst. Nat. i. p. 257 (1766).

Type, *H. ostralegus* (Linn.).

There is but one genus of these curious birds, with twelve species. They are found nearly all over the world, and are divided into two groups, the Pied Oyster-catchers and the Black Oyster-catchers, the former being mostly northern while the latter are southern birds, though *H. niger* reaches to North-west America, and *H. moquini* to the Canaries and Madeira.

PLATE LXXXI.

INSTITUTION
GLASGOW



OYSTER-CATCHER.

I. THE OYSTER-CATCHER. HÆMATOPUS OSTRALEGUS.

Hæmatopus ostralegus, Linn. Syst. Nat. i. p. 257 (1766); Macgill. Brit. B. iv. p. 152 (1852); Dresser, B. Eur. vii. p. 567, pl. 533 (1877); B. O. U. List Brit. B. p. 162 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 294 (1883); Seebohm, Hist. Brit. B. iii. p. 4 (1885); Saunders, Man. Brit. B. p. 543 (1889); Lilford, Col. Fig. Brit. B. part xii. (1890); Sharpe, Cat. B. Brit. Mus. xxiv. p. 107 (1896).

(*Plate LXXXI.*)

Adult Male.—General colour above glossy black; lower back, rump, and upper tail-coverts white; wing-coverts black, the bastard-wing feathers and the median series with white tips, the greater coverts pure white, with only a little blackish concealed near the base; primaries black, with the greater part of the inner web white, except near the ends and for some distance parallel to the shaft, the latter with a sub-terminal white streak, widening into a broad white streak on the inner primaries, the white extending on to the outer web; secondaries pure white with black tips, the central ones white, the long inner ones black; tail white, with the terminal third black, forming a broad band; head all round with the entire throat black; under the eye a white spot; remainder of under surface of body, from the lower throat downwards, pure white; the feathers of the fore-neck which adjoin the black throat being half white and half black, to correspond with the adjacent plumage; under wing-coverts and axillaries white; bill vermilion, tinged with yellow as far as the end of the nasal groove, the attenuated part dull yellow; feet pale lake or purplish-red; edges of the eyelids vermilion; iris crimson. Total length, 16 inches; culmen, 2·9; wing, 7·9; tail, 3·9; tarsus, 1·95.

Adult Female.—Similar to the male in plumage. Total length, 17 inches; culmen, 3·3; wing, 10·1; tail, 4; tarsus, 2.

Young.—Browner on the back than the adults, and with more or less sandy-brown vermiculations and margins to the ends of the feathers; across the middle of the throat a broad band of white; quills with a larger expanse of white, the white on the outer web of the third, fourth, fifth, and sixth quills continuous with the white on the inner web. The white band on the throat is lost during the first winter, disappearing sooner in the females than in the males.

Nestling.—Clothed with down of a sandy-grey colour, not much mottled with black, of which two lines run down each side of the back, with a single narrow line down the rump to the tail, and a lateral stripe along the lower flanks; the head has some irregular black stripes and patches; throat dusky-black; remainder of under surface of body white, as also the edge of the wing; thighs dusky-blackish. As the bird increases in size the plumage becomes darker, and is strongly barred with sandy-buff tips and edges to the feathers, but the black dorsal patches are retained in full force for a long time.

Range in Great Britain.—The Oyster-catcher is resident with us throughout the year, and breeds on our northern coasts and in Scotland, where it ascends the rivers for some little distance and nests on the rocky beds. It also nests in certain parts of England as far south as the Scilly Islands. In Ireland Mr. R. J. Ussher says that it breeds on the coasts and islands of all the maritime counties, except, perhaps, Louth, Meath, Wicklow, and Waterford. Mr. H. C. Hart states that he has found it nesting on an island in Lough Erne.

Range outside the British Islands.—The present species is found throughout most of the coasts of Europe from the North Cape to the Mediterranean, and as far east as the Valley of the Ob, but it ascends several large rivers of the Continent, as it does the Petchora and the Ob, while it also breeds on the shores of inland seas, such as the Black Sea and the Caspian. It is also found nesting on the Adriatic and about the mouth of the Rhone, but is principally known as a winter resident in the countries of the Mediterranean, and it also extends in winter down the Red Sea, and is said to have been met with in Mozambique, on the east coast of Africa, and in Senegambia on the west.

Habits.—The common names for the Oyster-catcher are "Sea Pie" and "Olive," the latter being a favourite name with the gunners in Pagham Harbour years ago. Large flocks are often seen in the autumn and winter, generally distributed over the sands, as the latter are left by the receding tide. They will also feed on the edge of the saltings along the margin of the tide. Some which I had in confinement for several years were pretty ornaments to the garden, but were always shy and never became tame, while their soft feet were soon cut about on the hard ground in frosty weather. When undisturbed, the males were rather fond of executing a kind of dance, with their wings expanded. Although this bird may not feed on oysters, as its name would imply, it devours whelks, limpets, and small marine animals and crustacea, as well as leaves and shoots of marine plants. It does not eat the shell of the whelk, but scoops its animal out with its powerful bill, and in pursuit of this kind of food the Oyster-catcher often frequents the rocks at low tide. I have seen numbers of them feeding and digging into the sand when the latter is quite dry, doubtless probing after some hidden mollusc, and the birds may always be observed from the railway as it skirts Morecambe Bay, as they often feed at no great distance from the line.

Nest.—Mr. Seebohm writes: "A peculiarity attached to the identification of the Oyster-catcher is the number of nests it forms and then deserts, ere making one to its liking. Frequently several empty nests are found near the one that is tenanted, as though the bird had tried several times before it had been suited. The nest is merely a little hollow amongst the rough shingle and broken shells, or in the sand, about six inches across and about one inch deep, and this is lined with little scraps of shells and small pebbles, generally more or less neatly and smoothly arranged. Sometimes the eggs are deposited in a little hollow amongst the drifted seaweed." The eggs of this bird have been found in several extraordinary situations, as, for instance, in a field and on the trunk of a felled pine-tree. A nest in the British Museum was taken by Mr. Bidwell in the Scilly Islands. It is a somewhat deep depression in the peaty moss, and the three eggs lie side by side, with a number of cockle-shells, one or two of which are also strewn about outside."

Eggs.—Mr. Robert Read writes to me: "Like the Ringed Sand-Plover, the Oyster-catcher breeds freely along the shores and on the islands both of salt and fresh water. It seems as much at home on the plough-fields and river-banks in Inverness-shire as on the sandy shores of the Farne Islands. I have found full sets of fresh eggs in Inverness-shire as early as April 20th, and young birds by the middle of May. The markings on the eggs consist sometimes of zig-zag streaks, and sometimes of spots and blotches more or less well-defined, small specimens of the latter kind being difficult to distinguish from some varieties of the Great Plover." The eggs are three in number, the ground-colour varying from warm clay-brown to stone-colour and pale greenish-olive. The overlying spots are blackish or dark chocolate-brown, generally distributed over the egg, sometimes as blotches and often in lines and scribblings. The underlying spots are pale purplish-grey, and are distinctly perceptible, especially on the more lightly-marked eggs. Axis, 2·1–2·55 inches; diam., 1·5–1·75.

THE AVOCETS AND STILTS. SUB-FAMILY HIMANTOPODINÆ.

The members of this Sub-family have been associated together by recent students of the *Charadriidæ*, and Mr. Seebohm has gone so far as to put the Avocet and the Stilt into the same genus, a conclusion with which I cannot agree; and it is even doubtful to my mind whether these birds are not sufficiently distinct from one another as to deserve being classed in different Sub-families. There is no dertrum or swelling at the end of the bill, which shows that they are not Plovers, and the legs are very long, especially in the case of the Stilts. In the latter the bill is straight, whereas in the Avocets it is up-curved and awl-like.

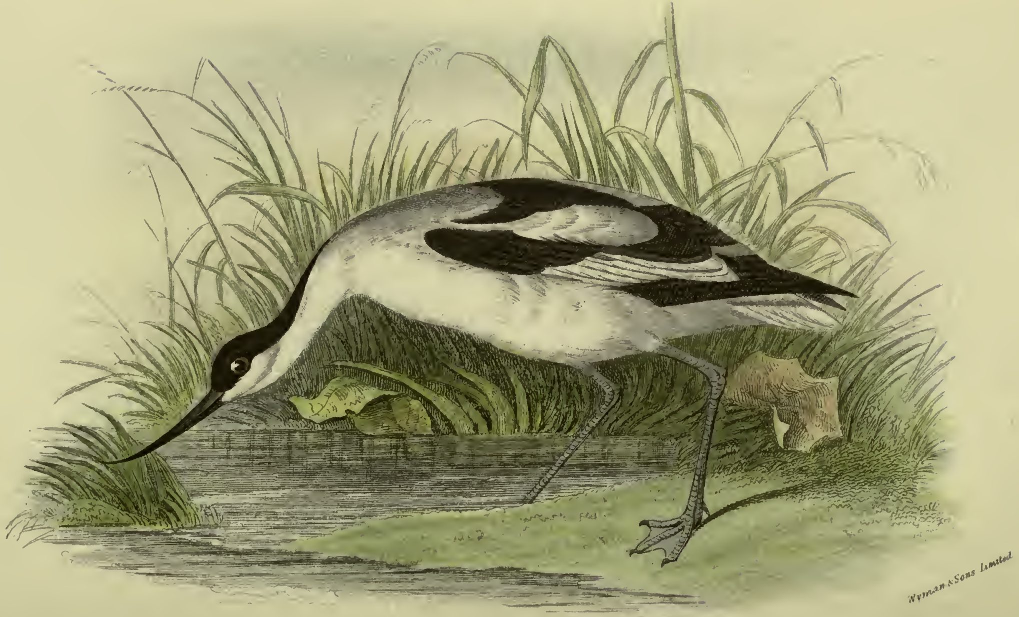
THE AVOCETS. GENUS RECURVIROSTRA.

Recurvirostra, Linn. Syst. Nat. i. p. 256 (1766).

Type, *R. avocetta* (Linn.).

Four species of Avocets are known, and the genus is found over the temperate and tropical portions of both

PLATE LXXXII.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AVOCET.

hemispheres. In addition to the up-turned bill, the lower edge of which is flattened, the Avocets are distinguished by the presence of a hind-toe, and by having the base of the toes distinctly united by a web.

I. THE AVOCET. RECURVIROSTRA AVOCETTA.

Recurvirostra avocetta, Linn. Syst. Nat. i. p. 256 (1766); Macgill. Brit. B. iv. p. 306 (1852); Dresser, B. Eur. vii. p. 577, pl. 534 (1875); B. O. U. List Brit. B. p. 162 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 299 (1883); id. Man. Brit. B. p. 545 (1889); Lilford, Col. Fig. Brit. B. part xiii. (1890); Sharpe, Cat. B. Brit. Mus. xxiv. p. 326 (1896).

Himantopus avocetta, Seebohm, Hist. Brit. B. iii. p. 74 (1885).

(*Plate LXXXII.*)

Adult Male.—General colour above varied with black and white; the upper part of the mantle and scapulars black; the rest of the back, rump, and upper tail-coverts pure white, as also the outer scapulars, which form a white band on each side of the lateral black bands on the back; small wing-coverts along the carpal edge of the wing white; median coverts black, forming a broad band down the wing; bastard-wing and greater coverts pure white, primary-coverts white with black tips, the inner ones pure white; outer primaries blackish with white at the base, the inner ones pure white as well as the secondaries, the innermost secondaries blackish; tail-feathers pale ashy-grey, the outermost feathers whitish; crown of head black, extending in a broad line to the hind-neck; lores also blackish, and also the feathers below the eye; sides of face and ear-coverts, sides of neck, and entire under surface of body, including the under wing-coverts, axillaries, and quill-lining, pure white; bill black; feet and toes pale blue; iris reddish-brown. Total length, 16·5 inches; culmen, 3·3; wing, 8·6; tail, 3; tarsus, 3.

Adult Female.—Similar to the male in plumage. Total length, 17 inches; culmen, 3·15; wing, 9; tail, 3·55; tarsus, 3·3.

Winter Plumage.—Both the old and young birds appear to have the white of the upper-parts sullied with grey, and the black of the head is confined to the crown, not reaching beyond the nape; some specimens, probably young ones, have a good deal of brown mixed with the black of the upper-parts. The tail is light grey in winter, and becomes pure white in summer.

Nestling.—Ashy-grey, slightly mottled with dusky bars; on the sides of the mantle two incomplete streaks of black; a black streak on the middle of the rump and a black line extending along the sides of the body across the base of the tail; minor black markings are seen upon the head and on the wings; under surface of body yellowish-white.

Range in Great Britain.—The Avocet is now only a rare visitor to England, in spring and autumn, but it used to nest in former times in many parts of England, especially in the Humber district and on the coasts of Norfolk, Suffolk, Kent, and Sussex, but it has not been known to breed, according to Mr. Howard Saunders, since the year 1824. It has never been more than a casual visitor to Scotland, Ireland, or the West of England.

Range outside the British Islands.—Although in many of the northern countries of Europe the Avocet has disappeared as a breeding bird as it has done in England, there are many places where it nests in localities suited to its habits. Thus on the shores of the Baltic, the Frisian Islands, and in Holland, the eggs may still be found; as well as on the deltas of the Rhone and Guadalquivir. Throughout the countries of the Mediterranean the bird is resident in suitable districts, becoming more abundant in Southern Russia and the Caspian to Central Asia, and thence to Dauria and Mongolia. It is also distributed from Egypt to Southern Africa, and breeds in many places. In winter the Avocet visits China and the Indian Peninsula.

Habits.—The present species is a very handsome bird, and when a company is feeding together, or wheeling in flight, their black-and-white plumage renders them very conspicuous. Mr. Seebohm says that, on the wing, flocks have a strange appearance, looking like a series of black and white stripes. "Like the Stilt," he writes, "the Avocet haunts the margins of the water, running daintily along the wet shining sands, or exploring the black mud-banks in the shallow lakes. It is not particularly shy, but, if alarmed, will mount into the air, its long legs stretched out behind in a line with its bill, and fly round and round, uttering its alarm-note, which resembles the syllables *tüt*, *tüt*, *tü-it*, *tü-it!* If one of the birds is wounded, its companions fly round over-head, incessantly uttering their notes, as if bewailing its fate. At all seasons of the year the Avocet is sociable, and may be observed in large or small parties. It is a very beautiful sight to watch a party of these birds, when their nesting-grounds are invaded, daintily running before you, their brilliant plumage contrasting strongly with the mud or sand. Every now and then they run a little way with up-lifted wings, occasionally rising in the air and flying round your head, uttering their anxious cries. The bird wades into water as deep as its belly, and will even venture farther, for it swims with ease, sitting lightly and gracefully on the water. In the course of their wanderings over the mud-flats and tide-washed sands, they often swim a little distance across a stretch of deep water, and, if pursued, will readily make use of their swimming powers to carry them out of danger. The food of the Avocet is captured principally on the mud and in marshy places. It is chiefly composed of worms, small crustaceans, and vast quantities of aquatic insects. Their prey is searched for as the bird moves its long slender recurved bill from side to side across the surface of the sand or mud, or in the shallows. The Avocet never appears to probe in the soft ground with its bill, but always uses it in a side direction. A small quantity of gravel is swallowed to aid digestion. Sometimes the bird captures the small gnats and other insects as they flutter over the water or flit by it on the land." Lord Lilford says: "The method of feeding is by sidelong scoops in the soft mud, which they sift with a sort of nibbling action between the mandibles. They are very active on foot, and excellent swimmers, continually shifting from place to place, uttering a pleasant, clear whistle, very different from their discordant cries when alarmed."

Nest.—A slight depression in the bare mud or sand or in short grass, with sometimes a little dry grass or leaves for lining. Mr. Seebohm says that those he found in the valley of the Danube were most of them slight, but some had more foundation than others; they were always on the dry land.

Eggs.—Four in number, pear-shaped. The general aspect of the ground-colour is a warm or pale clay-brown, some of the lighter-coloured eggs having an olive tinge. The spots are black and generally distributed over the egg, some of the larger ones being confluent and forming blotches. In many examples, however, the markings are very small and take the form of scratches and scribblings. The underlying spots are stone-grey, and are more perceptible in the sparsely-marked eggs. Axis, 1·75–2·05 inches; diam., 1·25–1·55.

THE STILTS. GENUS HIMANTOPUS.

Himantopus, Briss, Orn. v. p. 33 (1760).

Type, *H. himantopus* (L.).

The Stilts are distinguished from the Avocets by their straight bill and thin, long legs, which extend far behind the body of the birds. The toes have scarcely any connecting web, and are divided almost to the base. They differ from the Avocets also in wanting the hind-toe, or hallux. In Australia an intermediate form, *Cladorhynchus*, occurs, which has webbed toes and wants the hallux, resembling the Stilts in these respects, but having a slightly upturned bill, as in the Avocets.

Seven species of Stilts are known, and they inhabit both the Eastern and Western Hemispheres, though they do not range north of the temperate portions of the globe. *H. mexicanus* replaces *H. himantopus* in North America, *H. knudseni* is peculiar to the Sandwich Islands, *H. melanurus* is South American, while *H. leucocephalus*, *H. picatus*, and *H. melas* belong to the Australian Region.

I. THE BLACK-WINGED STILT. HIMANTOPUS HIMANTOPUS.

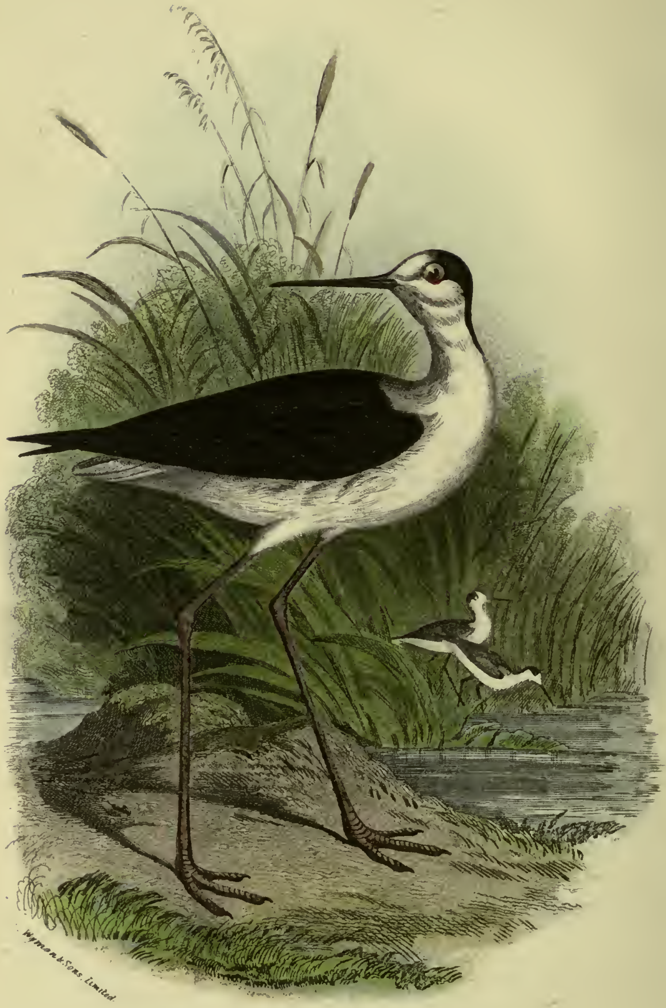
Charadrius himantopus, Linn. Syst. Nat. i. p. 255 (1766).

Himantopus melanopterus, Meyer; Macgill. Brit. B. iv. p. 312 (1852); Seebohm, Hist. Brit. B. iii. p. 79 (1885); Lilford, Col. Fig. Brit. B. part xiii. (1890).

Himantopus caudidus, Bonn.; Dresser, B. Eur. vii. p. 587, pls. 535, 536 (1877); B. O. U. List Brit. B. p. 163 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 305 (1883); id. Man. Brit. B. p. 547 (1889).

INSTITUTION

PLATE LXXXIII.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BLACK-WINGED STILT.

Himantopus himantopus, Sharpe, Cat. B. Brit. Mus. xxiv. p. 310 (1896).

(*Plate LXXXIII.*)

Adult Male.—General colour above black with a greenish gloss; entire back and rump pure white; upper tail-coverts pale ashy-grey, the outer feathers with a certain amount of white on the inner web; wings entirely black, glossed with green; head and neck all round, upper mantle, and entire under surface of body pure white; under wing-coverts black; axillaries white; bill blackish; feet rose-pink; iris deep carmine. Total length, 13 inches; culmen, 2·5; wing, 9·6; tail, 3; tarsus, 4·65.

Adult Female.—Similar to the male, but having the mantle, scapulars, and inner secondaries brown instead of black. Total length, 13 inches; wing, 9·1.

Young in First Plumage.—Similar to the adult female, and brown on the mantle, scapulars, and inner secondaries, which have sandy-buff margins to the feathers; the wings are black, but have sandy-buff margins, the quills brown on their inner webs towards the tips, which are broadly fringed or tipped with white; forehead and sides of face white; the crown of the head and nape brown; the hind-neck ashy-grey; under surface of body pure white, with a shade of grey on the fore-neck.

Nestling.—Covered with down of an isabelline colour above, varied with rather broad lines of black, with a streak of black down the lower back and rump; the first feathers being sandy-rufous, barred; entire under surface of body creamy-white.

Range in Great Britain.—A rare straggler to our islands, it has been recorded from all the three Kingdoms, but has seldom been noticed on the western side of Great Britain. It has occurred most frequently in the eastern and southern counties, and nearly always in summer.

Range outside the British Islands.—The Stilt breeds throughout the Mediterranean countries in suitable localities, as well as in Hungary, and thence eastwards through the Aralo-Caspian district to Turkestan and as far as the Hoangho Valley. It also nests in North-western India, and breeds in South Africa along with the Avocets. In winter it visits Africa and India as well as the Burmese provinces and Southern China. It is only a straggler to the countries of Northern Europe, as it is to Great Britain.

Habits.—This is one of the most extraordinary of all the Plovers, and is remarkable for its long legs. These are carried out behind it, when the bird is flying, and from their bright colour are very conspicuous. Mr. Seebohm observes:—"There are few sights more interesting to an English ornithologist than a breeding colony of Stilts. If quietly approached, they may be watched standing up to their knees in water, catching little tadpoles and water-beetles, picking up floating shell-fish, or snapping at the gnats in the air, or the water-spiders dancing on the surface of the lagoons. Perhaps it looks most elegant as it trips daintily on the yellow ooze, which scarcely seems to bend beneath its light weight. Sometimes two or three may be seen feeding together, walking with deliberate, graceful step, which is occasionally quickened almost into a run; but they seldom utter a note. They do not seem to be particularly shy, and it is not necessary to keep concealed among the reeds, except when you approach the nests. Then the habits of the birds change entirely: all idea of feeding is given up, and their whole attention is absorbed in the effort to decoy you from the colony; they are alarmed for the safety of their eggs, and in their excitement they suddenly become noisy birds. As they run along the sand, with uplifted wings, they look the perfection of beauty and grace, but they soon take wing, and try hard to lead you inland to the steppe. Generally two or three fly together, looking almost like miniature Storks as they pass over; the neck is outstretched and the bill is slightly depressed, while the long red legs, which reach considerably beyond the tail, are also extended slightly below the horizontal line. The motion of the wings is not very rapid, but the line of flight is straight. Now and then the bird skims along for a short distance with outspread, motionless wings, and, whilst thus slowly sailing along, it has a curious habit of dropping its legs, but this action is performed so high in the air that the bird can scarcely be making preparations to alight, and may perhaps be only trying to attract attention to itself. All this time the birds are noisy enough. The Stilt has two cries of anxiety at the nest—one a sharp, rapidly repeated *kít-kít-kít*, or *hit*, *hit*, *hit*, and the other a sort of rattling note, resembling the syllable *peur-r-re*. As the wily bird succeeds in luring the intruder away from its treasures, it does not fly so near him; the former note only is heard, and is less rapidly and less anxiously repeated; the final *t* is omitted, or is inaudible, and the note sounds like *kee*, *kee*, *kee*." Lord Lilford writes:—"I have always found this bird very easy of approach. In the breeding-season it is difficult to drive them from their nesting-places, over which they hover with loud outcries, and I have frequently ridden to within a few feet of Stilts wading in a few inches of water, and busily engaged in picking up small insects from the weeds, or snapping at them in the air. In Spain I have found the stomachs and throats of these birds crammed with what I believe to have been mosquitoes, or some very nearly allied and probably equally pestilent insects, and on this score alone this pretty bird is worthy of protection, more especially as its flesh is worthless, and its tameness so great that the most rabid collector can obtain more specimens than he can reasonably require in a few minutes." Colonel Irby says that the Stilt is, in spring, one of the most common of the marsh-birds on both sides of the Straits of Gibraltar. At Meshree el Haddar, in Marocco, and in the marisma of the Guadalquivir, their numbers were perfectly marvellous. "In some seasons they have nested at the Laguna de la Janda. They frequent open shallow pools and lakes, and are very seldom seen where there is grass or rushes, being, as a rule, very tame and confiding, while their conspicuous black and white plumage and noisy habits render them certain to attract attention, either as they fly with their long pink legs stretched out, Heron-like, behind them, or as they wade about, usually up to their knees, in the shallow water, where they seek their food in the shape of aquatic insects, gnats, and flies."

Nest.—Placed in various situations, such as on the half-dried mud in Spain. Mr. Howard Saunders has found the nest by the pools in the marismas, consisting of a slight nest of bents by the side of a tuft of rushes, often so near the water as to be coated with mud from the bird's feet. Sometimes they are more solid structures, and Mr. Seebohm found nests in the Dobrudscha built of weeds, broken bits of old dead reeds, and standing from two to three inches above the level of the water, while another had a foundation of yellow ooze. "The slight hollow was about six inches across and the nest was about eight inches in diameter at the surface of the water."

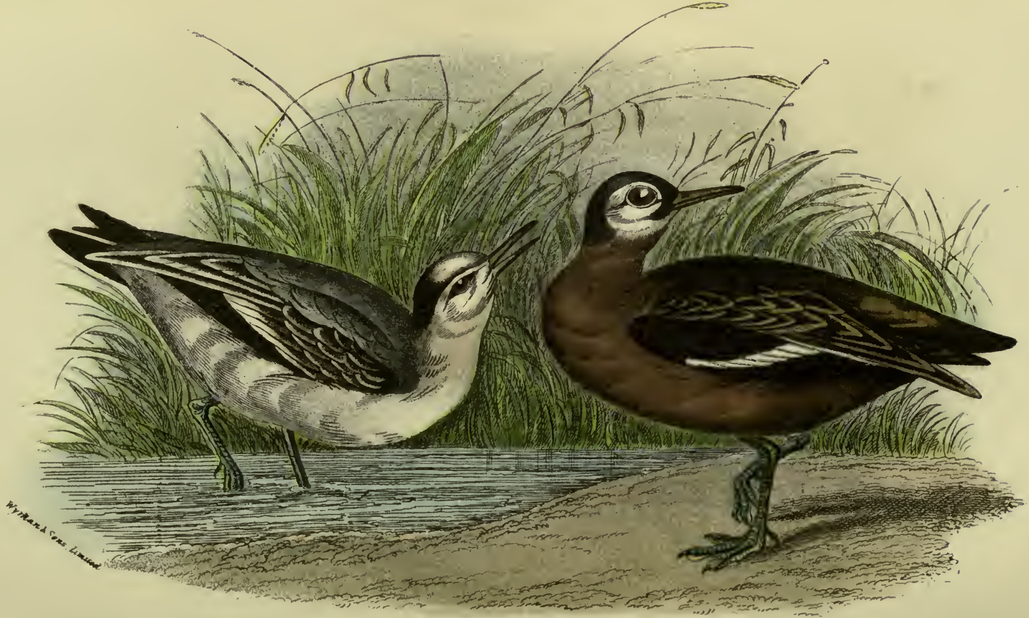
Mr. A. O. Hume gives an interesting account of the breeding of the Stilt in the salt-district of North-western India. He writes:—"The birds have their choice of sites, though on what this depends I could not find out. Not one nest was found in two successive seasons at Bulpoor or Kuliawas; very few at Sultanpoor. On the other hand, at Moobarikpoor (and all the salt-works are exact facsimiles one of the other) the nests were, in some places, crowded to an inconceivable degree. On one strip, about three feet wide and one hundred feet long, there were twenty-seven nests on one margin and eleven on the other, besides five nests of the Red-wattled Lapwing. So accustomed were the birds to the workmen walking up and down the middle of this strip, that many of the birds never moved, though we passed within a few inches of them, and those that did move merely stalked leisurely a few paces away into the salt-pans on either side."

Eggs.—Four in number, but often only three. In Ceylon, Colonel Vincent Legge says that he has found many nests containing three hard-set eggs, and he states, moreover, that for the most part they were not placed point to point, as is the usual rule with Plovers. The eggs of the Stilt have a great general resemblance to those of the Avocet, but are very much smaller. The colour of the eggs varies from clay-brown to olive stone-colour, but a lighter type is also sometimes met with, where the ground-colour is of a creamy stone-colour or buff. As a rule the eggs are heavily spotted and blotched, when the spots become confluent, and lightly spotted eggs are less frequent than in the Avocet. In the Hume collection are some which have the spots congregated at either the large or the small end. Axis, 1·55–1·85 inch; diam., 1·15–1·3.

THE PHALAROPES. SUB-FAMILY PHALAROPINÆ.

These curious, soft-plumaged little Plovers are easily recognised by their lobed toes, which have scalloped webs like the

PLATE LXXXIV.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GREY PHALAROPE.

Coots or Grebes. They have also another character which is Grebe-like, and which I have not yet seen recorded, viz., that on the hinder aspect or "sole" of the tarsus (*planta tarsi*) there is a distinctly coarse serration or pectination. Added to these characters, it must be noticed that the Phalaropes are adepts at swimming, and I have, therefore, in the "Catalogue of Birds," placed them at the very end of the Plovers, as a connective link between these birds and the Grebes. Another peculiarity is that the female Phalarope is always larger and more brightly coloured than the male.

THE TRUE PHALAROPES. GENUS CRYMOPHILUS.

Crymophilus, Vieill. Analyse, p. 62 (1816).

Type, *C. fulicarius* (L.).

In the present genus the bill is rather flat and slightly widened towards the tip, the culmen being about equal in length to the tarsus, which is again equal to the middle toe and claw.

I. THE GREY PHALAROPE. CRYMOPHILUS FULICARIUS.

Tringa fulicaria, Linn. Syst. Nat. i. p. 249 (1766).
Phalaropus lobatus, L.; Macgill. Brit. B. iv. p. 284 (1852).
Phalaropus fulicarius, Dresser, B. Eur. vii. p. 606, pl. 538 (1874); B. O. U. List Brit. B. p. 164 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 310 (1883); Seebohm, Hist. Brit. B. iii. p. 85 (1885); Saunders, Man. Brit. B. p. 549 (1889); Lilford, Col. Fig. Brit. B. part xxx. (1895).

(*Plate LXXXIV.*)

Adult Female in Breeding Plumage.—General colour above sandy-buff, streaked with black centres to the feathers; scapulars like the back; lower back dark slate-colour; rump and upper tail-coverts chestnut with black centres to many of the feathers; some of the tail-coverts slaty-grey with sandy margins; lesser wing-coverts slaty-blue, with whitish edgings; the median series and greater coverts broadly tipped with white; bastard-wing, primary-coverts, and quills blackish with white shafts, the inner primary-coverts tipped with white, most of the primaries white at the base of the outer web, the secondaries for the most part white, blackish towards the ends of the outer webs, the innermost secondaries dark slate-colour or blackish with sandy-rufous edges, like the back; centre tail-feathers blackish with sandy margins, the lateral ones dark grey fringed with white, the outermost more broadly edged and having a white shaft; crown of head sooty-black; nape and hind-neck also blackish; forehead, lores, anterior part of face, chin and upper throat dark slate-colour; feathers below the eye, a small streak above the latter, and ear-coverts white; sides of neck and entire surface of body vinous chestnut; under wing-coverts and axillaries white; quills ashy below, whitish along the inner webs; bill waxy-yellow with a jet-black tip; feet dull yellowish. Total length, 7 inches; culmen, 1; wing, 5·4; tail, 2·6; tarsus, 0·85.

Adult Male in Breeding Plumage.—Similar to the female, but not so brightly coloured, the head being sandy-brown, streaked with blackish like the back, and not so sooty-black as in the female bird; sides of face vinous-chestnut, the base of the cheeks and chin tinged with slaty-grey, with a good deal of white on the throat and under surface of body, which never seems to get so uniformly vinous-chestnut as in the adult female. Total length, 7·5 inches; culmen, 0·85; wing, 5·05; tail, 2·55; tarsus, 2·55.

Adult Male in Winter Plumage.—Bluish-grey with a black patch on the nape; wings more dusky than in summer, but with the white markings similar, the innermost secondaries bluish-grey like the back and scapulars; forehead, eyebrow, sides of face and entire under surface of body pure white; the top of the crown white, slightly mottled with dusky bases to the feathers; feathers in front of the eye and a streak along the upper edge of the ear-coverts black.

Young.—Distinguished from the adults by the sandy-buff margins to the feathers of the upper surface and by the vinous tinge of the throat and fore-neck; the fore part of the crown is buffy-white, with a broad horse-shoe mark of black on the hinder crown.

Range in Great Britain.—The Grey Phalarope visits us every autumn and winter with tolerable regularity, but in some years a large immigration takes place and many are killed on our southern coasts. In the autumn of 1866 a large influx of individuals was recorded, and others have occurred in 1869, 1886, and again in 1891. On the last occasion several were sent to me at the British Museum, some from inland localities, where they had been picked up dead. "On the east of England," writes Mr. Howard Saunders, "this Phalarope seldom alights above Norfolk, but in Scotland, according to Gray, it visits all the shores from Berwick to the Orkneys; it is, however, seldom met with in Sutherland, and has not yet been recorded from the Outer Hebrides, though found within their line. It is rare in Ireland; a few were obtained in the south in the autumn of 1886, and others in 1891."

Range outside the British Islands.—The Grey Phalarope is a circum-polar species breeding in the Arctic Regions of both hemispheres. In America it breeds from Alaska to Greenland, and has been found as far north as 82° 30′. It also breeds in Spitsbergen and Iceland, and was found by Von Middendorf in the Taimyr Peninsula. In winter the Grey Phalarope visits the British seas, the Mediterranean, and the Indian Ocean, and has been found as far south as New Zealand; it has also been met with off the coast of Chili.

Habits.—In America the present species is known as the Red Phalarope, this name being taken from the summer plumage, whereas in England it is called the Grey Phalarope from the prevailing colour of the bird when it visits us. Mr. E. W. Nelson states that in Alaska it arrives within the last few days of May and early in June, and remains near Point Barrow till the sea closes in October. He writes: "It is much more gregarious than its relative, and for a week or two after its first arrival fifty or more flock together. These flocks were very numerous on the 1st of June, 1879, at the Yukon mouth, where I had an excellent opportunity to observe them. In the morning the birds which were paired could be found scattered here and there, by twos, over the slightly-flooded grassy flats. At times these pairs would rise and fly a short distance, the female, easily known by her bright colours and large size, in advance, and uttering now and then a low, musical 'clink, clink,' sounding very much like the noise made by lightly tapping together small bars of steel. When the birds were disturbed, these notes were repeated oftener and became harder and louder.

"A little later in the day, as their hunger became satisfied, they began to unite into parties, until fifteen or twenty birds would rise and pursue an erratic course over the flat. As they passed swiftly along, stray individuals and pairs might be seen to spring up and join the flock. Other flocks would rise and the smaller coalesce with the larger until from two hundred to three or even four hundred birds were gathered in a single flock. As the size of the flock increased, its movements became more and more irregular. At one moment they would glide straight along the ground, then change to a wayward flight, back and forth, twisting about with such rapidity that it was difficult to follow them with the eye. Suddenly their course would change, and the compact flock, as if animated by a single impulse, would rise high over head, and after a series of graceful and swift evolutions, come sweeping down with a loud, rushing sound to resume their playful course near the ground. During all their motions the entire flock moved in such unison that the alternate flashing of the under-side of their wings and the dark colour of their back, like the play of light and shade, made a beautiful spectacle. When wearied of their sport the flock disbanded and the birds again resumed their feeding.

"When the Red Phalarope arrives in spring, its preference is for the flat wet lands bordering the coast and rivers, where it remains to breed. It is not usually found on the sea at this season, but on June 10, 1878, a number were seen swimming along the floating ice in the Bay of St. Michael's. Very early in June the females have each paid their court and won a shy and gentle male to share their coming cares."

Nest.—The nest, according to Mr. Nelson, consists of a slight depression, generally on the damp flats with very rarely any lining. One was found by him on the 8th of June within six feet of a small brackish pool, the eggs being deposited upon a nest of dried leaves under a dwarf willow.

Eggs.—Four in number and very much pointed. The ground-colour is very dark, of a deep clay-colour, verging to chocolate-brown, in some instances, with a slight olive tinge. More rarely eggs with a light clay-brown ground are found. The markings are heavy, and consist of large spots of dark brown or blackish, often confluent at the larger end of the egg, and forming large blotches. The underlying spots are of a greyish-brown. Axis, 1·15–1·4 inch; diam., ·0·85–0·9.

THE RED-NECKED PHALAROPES. GENUS PHALAROPUS.

Phalaropus, Briss. Orn. vi. p. 12 (1760).

Type, *P. hyperboreus* (L.).

In the Red-necked Phalaropes the bill is very long and slender, and tapers to a point without being widened in any way. The tarsus is longer than the middle toe and claw.

Only one species is known.

I. THE RED-NECKED PHALAROPE. PHALAROPUS HYPERBOREUS.

Tringa hyperborea, Linn. Syst. Nat. i. p. 249 (1766).
Lobipes hyperboreus, Macgill. Brit. B. iv. p. 291 (1852).
Phalaropus hyperboreus, Dresser, B. Eur. vii. p. 597, pls. 537, 539, fig. 2 (1874); B. O. U. List Brit. B. p. 164 (1883); Saunders, ed. Yarrell, Brit. B. iii. p. 315 (1883); Seebohm, Hist. Brit. B. iii. 89 (1885); Saunders, Man. Brit. B. p. 551 (1889).

Adult Female in Breeding Plumage.—General colour above dark slaty-grey, with a band of sandy-buff down each side of the mantle; lower back, rump, and upper tail-coverts slaty-blackish with white margins; some of the lateral tail-coverts, for the most part, white, with blackish spots; wing-coverts slaty-black, the greater series tipped with white, forming a band; bastard-wing and inner primary-coverts tipped with white, like the greater coverts; primary-coverts and quills blackish, the primaries with white shafts, the secondaries edged with white, the median ones, for the most part, white on the inner web also; scapulars lengthened like the inner secondaries, and most of them externally spotted with sandy-buff, forming a parallel band to the one which skirts the mantle; tail slaty-blackish, the feathers narrowly fringed with white; crown of head, nape, and hind-neck dark slaty-grey, as also the lores, feathers below the eye, and ear-coverts; entire lower throat bright ferruginous, this colour extending over the sides of the neck to behind the ear-coverts; the fore-neck mottled with slaty-grey, which colour extends over the upper breast, where it is slightly tinged with rufous; remainder of under surface of body, from the fore-neck downwards, pure white; the sides of the body streaked with ashy centres to the feathers; under tail-coverts white, the longer ones mottled with ashy-grey spots near the tips; under wing-coverts white, the feathers round the bend of the wing dusky with white tips; quills dusky below, ashy along the inner web. Total length, 7 inches; culmen, 0·9; wing, 4·35; tail, 1·85; tarsus, 0·75.

Adult Male in Breeding Plumage.—Similar to the female, but not quite so brightly coloured, the rufous of the neck not being so strongly developed, and not extending across the lower throat, this part as well as the fore-neck and the sides of the breast being dark slaty-grey, mostly with whitish edgings to the feathers; bill black; feet greyish-blue, the outer aspect of tarsus, outer toe, and the joints darker; soles and outer web blackish; iris dark brown. Total length, 6·8 inches; culmen, 0·9; wing, 4·2; tail, 1·7; tarsus, 0·75.

Young.—General colour above blackish, streaked with dark ochreous, the feathers of the back being of this colour, with black centres; lower back and rump slaty-blackish; the upper tail-coverts with ochreous margins; wing-coverts entirely slaty-blackish with whitish margins to the median series, the greater series being broadly tipped with white; quills as in the adult; the innermost secondaries and scapulars broadly edged with ochreous-buff; tail as in the adult, the centre feathers edged with ochreous, the outer ones with white; crown of head and hind-neck dull slaty-blackish, a little clearer on the latter; fore-head, sides of face, and a broad eyebrow white; feathers in front of the eye and ear-coverts slaty-blackish; cheeks and under surface of body white, dusted with ashy-brown on the fore-neck, chest, and sides of body; bill black; feet flesh-colour, outer aspect and joints dark greyish; iris hazel.

Range in Great Britain.—The Red-necked Phalarope breeds sparingly in the Shetlands and Orkney Islands, and in the Outer Hebrides; but the demand for British-taken eggs has sadly diminished the numbers of those which nest within this limited area. In other parts of Great Britain the species is only procured as a migrant, occurring chiefly in the autumn. Only one occurrence in Ireland has been recorded, namely, in Armagh in November, 1891.

Range outside the British Islands.—Although a circum-polar bird, like its ally, the Grey Phalarope, the present species has a more southern breeding-range than that species. It nests in the Arctic Regions of America from Alaska to Southern Greenland, and thence from Iceland and the Færoe Islands to Northern Scandinavia, and eastwards as far as Kamtchatka. In winter it goes south as far as the Malayan Archipelago, passing by China and Japan, and occurring at the same time on the shores of the Indian Ocean.

Habits.—An excellent account of the habits of this bird is given by Mr. Nelson. Speaking of the birds in Alaska, he observes:—"As summer approaches on the arctic shores and coast of Bering Sea, the numberless pools, until now hidden under a snowy covering, become bordered or covered by water; the mud about their edges begins to soften, and through the water the melting ice in the bottom looks pale green. The Ducks and Geese fill the air with their loud resounding cries, and the rapid wing-strokes of arriving and departing flocks add a heavy bass to the chorus which greets the opening of another glad season in the wilds of the cheerless north. Amidst this loud-tongued multitude suddenly appears the peaceful fairy-like form of the Northern Phalarope. Perhaps, as the hunter sits by the border of a secluded pool, still half-covered with snow and ice, a pair of slight wings flit before him, and there, riding on the water, scarcely making a ripple, floats this charming and elegant bird. It glides hither and thither on the water, apparently drifted by its fancy, and skims about the pool like an autumn leaf wafted before the playful zephyrs on some embosomed lakelet in the forest. The delicate tints and slender fragile form, combining grace of colour and outline with a peculiarly dainty elegance of motion, render this the most lovely and attractive among its handsome congeners.

"The first arrivals reach St. Michael's in full plumage from May 14–15, and their number is steadily augmented until, in the last few days of May and first of June, they are on hand in full force, and ready to set about the season's cares. Every pool now has from one to several pairs of these birds gliding in restless zig-zag motion about its border, the slender necks at times darting quickly right or left as the bright black eyes catch sight of some minute particle of food. They may be watched with pleasure for hours, and present a picture of exquisite gentleness, which renders them an unfailing source of interest. The female of this bird, as is the case with the two allied species, is much more richly coloured than the male, and possesses all the 'rights' demanded by the most radical reformers.

"As the season comes on, when the flames of love mount high, the dull-coloured male moves about the pool, apparently heedless of the surrounding fair ones. Such stoical indifference usually appears too much for the feelings of some of the latter to bear. A female coyly glides close to him and bows her head in pretty submissiveness, but he turns away, picks at a bit of food, and moves off; she follows, and he quickens his speed, but in vain; he is her choice, and she proudly arches her neck, and, in mazy circles, passes and repasses close before the harassed bachelor. He turns his breast first to one side, then to the other, as though to escape, but there is his gentle wooer ever pressing her suit before him. Frequently he takes flight to another part of the pool, all to no purpose. If, with affected indifference, he tries to feed, she swims along side by side, almost touching him, and at intervals rises on wing above him, and, poised a foot or two over his body, makes a half-dozen quick sharp wing-strokes, producing a series of sharp whistling noises in rapid succession. In the course of time, it is said, water will wear away the hardest rock, and it is certain that time and importunity have their full effect upon the male of this Phalarope, and soon all are comfortably married, while *materfamilias* no longer needs to use her seductive ways and charming blandishments to draw his notice. About the first of June the dry, rounded side of a little knoll near some small pond has four dark, heavily-marked eggs laid in a slight hollow upon whatever lining the spot affords, or, more rarely, upon a few dry straws and grass-blades, brought and loosely laid together by the birds.

Here the captive male is introduced to new duties, and spends half his time on the eggs, while the female keeps about the pool close by. In due time the young are hatched and come forth, beautiful little balls of buff and brown. During incubation, if the nest is approached, the parent bird usually flies off the eggs when the intruder is some yards away, and proceeds to feed about the surface or edge of the nearest pool, as though nothing unusual had occurred. At times the parent shows a little anxiety, and swims restlessly about the pool, uttering a low, sharp, metallic '*pleep*.' When a bird leaves the eggs, it is usually joined at once by its mate. In one or two instances a parent bird came gliding stealthily through the grass to the nest while I was occupied in packing the eggs in my basket."

Nest.—Messrs. Pearson and Bidwell state that the nests which they found in the north of Norway were neatly made of fine grass, and rather deep in proportion to their width. On the Lofodens and in the Porsanger-fjord the species often nested quite on the edge of small tarns or peat-holes, in grass about six inches high; a few were in marsh ground covered with grass of the same height. Mr. Seebohm found the nest in the Petchora to be a somewhat slight structure of dried stalks, generally placed in the middle of a tuft, so that it is not unfrequently a foot or more from the ground. In some places, where the grass was short, the nest was scarcely more than a hollow in the ground, lined with dry grass.

Eggs.—These are easily distinguished from those of the Grey Phalaropes by their smaller size, and by their somewhat darker general tone, the spots being often very large, and forming blotches, which cover a great part of the egg. Axis, 1·05–1·25 inch; diam, 0·75–0·85.

THE LONG-BILLED PHALAROPES. GENUS STEGANOPUS.

Steganopus, Vieill. N. Dict. d'Hist. Nat. xxxii. p. 136 (1819).

Type, *S. tricolor* (Vieill.).

The Genus *Steganopus* differs from the other genera of Phalaropes in having a longer bill, the web between the outer and middle toe not reaching to the second joint, and the latera membrane narrow, and scarcely scalloped.

Only one species, peculiar to America, is known, viz. :—

I. WILSON'S PHALAROPE. STEGANOPUS TRICOLOR.

Steganopus tricolor, Vieill. N. Dict. d'Hist. Nat. xxxii. p. 136 (1819).

Phalaropus wilsoni, Saunders, Man. Brit. B. p. 552, note (1889).

Adult Female in Breeding Plumage.—General colour above light grey in the middle of the back, with a broad streak of vinous-chestnut on each side of the mantle; scapulars for the most part dark vinous-chestnut, forming a broad streak on each side of the back; lower back and rump brown, the sides of the latter white; upper tail-coverts dusky-brown, irregularly mottled and edged with white, the longer ones centred with pale rufous, the lateral ones pure white; wing-coverts uniform dull brown, with a narrow white edging to the greater coverts; bastard-wing and primary-coverts like the wing-coverts; quills also dusky-brown with light brown shafts, the first primary with a white shaft; centre tail-feathers ashy-brown, the remainder ashy-brown, with more or less white on the inner web, the white increasing in extent towards the outermost rectrix, which has little more than the outer web ashy; crown of head uniform pearly-grey; occiput, nape, and hind-neck white; lores grey, like the head, followed by a white ante-ocular spot, which is surrounded by a black margin; upper eyelid also white, lower eyelid black, like the feathers in front of the eye and below the latter, where they form part of a black band formed by the ear-coverts, and the sides of the neck and sides of the crown; cheeks, chin, and upper throat white; lower throat clear ferruginous or chestnut, sharply defined on the upper margin, and becoming paler on the fore-neck and sides of breast; centre of fore-neck, breast, and under surface of body pure white; under wing-coverts and axillaries also white, the feathers round the edge of the wing ashy-brown; quills below dusky-brown, slightly paler along in the inner web; bill black; feet bluish-grey, claws black; iris brown. Total length, 9·3 inches; culmen, 1·45; wing, 5·5; tail, 2·3; tarsus, 1·35.

Adult Male in Breeding Plumage.—Much duller than in the female; the mantle-feathers blackish-brown, with reddish edges; the crown of the head uniform blackish, the nape white, shading off into ashy-grey on the hind-neck; all the vinous parts of the upper surface indicated as in the female, but the colour never so bright, and always of a dull chestnut; rump and upper tail-coverts white, with a sub-terminal line of dusky-brown, forming a kind of horse-shoe mark on the feather, the lateral upper tail-coverts white; sides of crown chestnut, like the sides of the neck, slightly mixed with black, but not entirely black, as in the female; under surface of body as in the female, but the rufous part duller. Total length, 8·3 inches; culmen, 1·25; wing, 4·9; tail, 1·85; tarsus, 1·25.

Adult Male in Winter Plumage.—General colour above light ashy-grey, with narrow white fringes to the feathers; lower back somewhat more dusky; rump and upper tail-coverts white, the longer tail-coverts ashy-grey, with white margins; crown of head ashy-grey, like the neck; forehead, a broad eyebrow, sides of face, and entire under surface of body pure white; feathers in front of the eye blackish; along the top of the ear-coverts a line of ashy; sides of upper breast shaded with light ashy.

Young.—Mottled on the upper surface, the feathers being blackish in the centre, with light sandy-buff edges, being broader and rather more distinct on the wing-coverts, scapulars, and inner secondaries; the lower back like the rest of the upper surface; rump and upper tail-coverts white, the former with dusky centres to the feathers; tail-feathers brown, all but the centre ones white on the inner web; bastard-wing, primary-coverts, and primaries as in the adult; crown of head blackish, the feathers edged with sandy-buff, the hind-neck more ashy, the feathers with dusky centres and narrow ashy-brown margins; forehead, eyebrow, sides of face, and under-surface of body white, with a tinge of ashy on the eyebrow; lower throat, fore-neck, and chest, as well as the sides of the body, tinged with isabelline, the sides of the breast and flanks mottled with blackish centres to the feathers.

Range in Great Britain.—On May 18, 1886, at a meeting of the Zoological Society of London, Mr. J. Whitaker exhibited a specimen of this species, which was stated to have been shot some years ago at Sutton Ambion, near Market Bosworth, in Leicestershire. As far as the circumstances can be ascertained, the occurrence seems to be perfectly genuine.

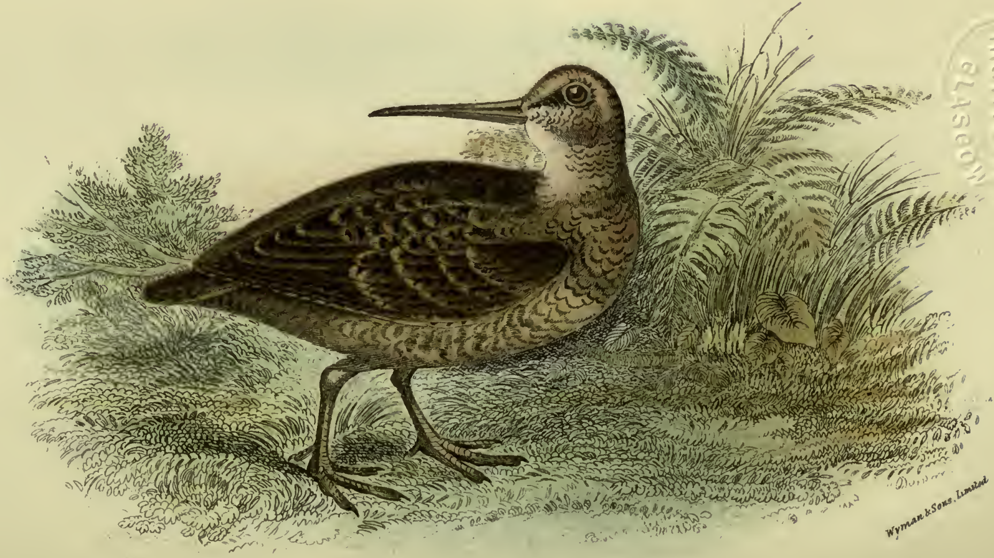
Range outside the British Islands.—Wilson's Phalarope is generally distributed through temperate North America, principally inland, and breeds from Northern Illinois and Utah to the Saskatchewan region, ranging south in winter, through Central America and South to Brazil and Patagonia.

Habits.—Mr. D. G. Elliott gives the following account of its habits:—"As a rule, Wilson's Phalarope goes in small companies, though at times large flocks of several hundreds are met with. It is not very shy, frequently permitting one to approach within a few feet, and it does not swim so much upon the water as is the habit of the other species, but wades about up to its belly, picking its food from off the surface. When necessary, however, it swims gracefully, and with ease, and the young, soon after emerging from the egg, are equally at home upon the surface of ponds, paddling about and diving with facility. The female is the larger and altogether the handsomer bird, the male having very little of the brilliant tints which render his mate so attractive when arrayed in her full summer dress. Upon him, too, devolves the duty of incubation to a very great degree, the female amusing herself upon or near the water. Like the other species of Phalarope, she makes all the advances at pairing-season, and sometimes more than one female fixes her affection upon some particular male, who thereupon has but little peace, as he is pursued from place to place by the rival suitors. Finally, the matter having been successfully arranged, the winged Dido bears off her Æneas, and a slight depression having been scratched in the soil, and lined with grass, or a loosely-constructed nest made in a clump of grass, the eggs, three or four in number, are deposited, and the male assumes the novel and unusual duties for one of his sex, of incubation. Wilson's Phalarope is a rather silent species, its note having a kind of nasal quack-like sound. Its food is similar to that of the other Phalaropes."

Eggs.—Vary from a fawn-colour to a rufous-drab, profusely spotted and speckled with rufous shades of brown, thickest at the larger end. Axis, 1·35 inch; diam., 0·95.

PLATE LXXXV.

BAILLIE'S
INSTITUTION
GLASGOW



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WOODCOCK.

THE SNIPES. SUB-FAMILY SCOLOPACINÆ.

The Snipes, with which are associated the Wood-cocks, are principally distinguished from the Plovers by having no webs to the toes, which are cleft to the actual base. The tarsus is not reticulated, but is transversely scaled or plated, both before and behind. The bill is long and soft, and the nasal groove is produced along the greater part of the upper mandible. The plumage is in every case marbled or mottled to an extreme degree.

The bill of the Snipe is somewhat soft, and the birds possess a peculiar power of being able to elevate the distal extremity of the upper mandible. Dr. Shufeldt believes that "this achievement, taken in connection with the extreme sensitiveness of the end of the upper beak in these birds, enables them both to quickly detect and seize their food in the soft ooze wherein they probe for it."

THE WOOD-COCKS. GENUS SCOLOPAX.

Scolopax, Linn. Syst. Nat. i. p. 243 (1766).
Type, *S. rusticula* (Linn.).

The Wood-cocks belong to the long-billed section of the Snipes, in which the culmen is longer than the tarsus. They have a large eye, which is placed far back in the head, so that its hinder-margin is just above the orifice of the ear. The wing is more rounded than in the Snipes, the long, inner secondaries not reaching to the primaries. The tail-feathers are twelve in number and the tibia is feathered to the tarsal joint.

I. THE WOOD-COCK. SCOLOPAX RUSTICULA.

Scolopax rusticula, Linn. Syst. Nat. i. p. 243 (1766); Dresser, B. Eur. vii. p. 615, pl. 540 (1877); B. O. U. List Brit. B. p. 165 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 320 (1883); Seebohm, Hist. Brit. B. iii. p. 231 (1885); Saunders, Man. Brit. B. p. 553 (1889); Lilford, Col. Fig. Brit. B. part viii. (1888); xiv. (1890).

Rusticola sylvestris, Macgill. Brit. B. iv. p. 386 (1852).

(*Plate LXXXV.*)

Adult Male.—General colour above rufous, black, and grey, the whole aspect of the upper surface being mottled; the ground-colour is rufous, the feathers freckled with coarse black cross-lines and with large terminal or sub-terminal spots of black: many of the feathers tipped with grey, which is distributed over the whole of the upper surface in spots and patches; the scapulars with dusky-greyish cross-bars, each bar with a narrow blackish marking; wing-coverts more rufous than the back, the lesser-coverts barred with black spots, the median and greater series with dusky-grey cross-markings composed of bars or twin-spots, which have a narrow black line both above and below, the inner coverts spotted with white or greyish-white at the ends; bastard-wing, primary-coverts, and quills dusky-brown, chequered with rufous notches on the outer web, the inner web, for the most part, uniform, except for some slight notches on the extreme inner margin; the notches on the outer webs of the first two primaries much paler and inclining to whitish, or in old birds, almost disappearing, so that it becomes nearly uniform; the inner secondaries resembling the greater-coverts and being barred across or having twin-spots of blackish or ashy-brown, all the inner secondaries having an ashy-white spot at the ends, and being largely marked with black in continuation of the pattern of the scapulars; lower back, rump, and upper tail-coverts rufous with obsolete cross-markings of ashy-brown; tail-feathers blackish-brown, notched on the outer webs with rufous, and having a grey band at the tip, which is silvery-white underneath; the forehead, eyebrow, and sides of face ashy, with a few bars of dusky-black, of which there is a spot at the base of the mandible as well as a blackish line from the base of the latter to the eye; the hinder crown principally black, mottled with rufous, and barred across with ashy or greyish-white bands; the hind-neck and sides of neck ashy-grey mottled with bars of dusky-blackish; ear-coverts ashy with a black bar across them; the cheeks somewhat whiter and minutely spotted with black; chin white; remainder of under surface ashy-white and barred with pale brown; the fore-neck, breast, and sides of body buff, the latter having light brown bars, edged above and below with blackish lines; under tail-coverts sandy-buff inclining to silvery-white at the tips, the feathers barred with dusky-black and having a sub-terminal arrow-shaped black spot; under wing coverts and axillaries tawny-buff barred with blackish; lower primary-coverts and quill-lining ashy-grey, notched with buff on the inner webs; bill dusky-brown, livid at base of lower mandible; feet greyish; iris dark brown. Total length, 15 inches; culmen, 2·85; wing, 7·5; tail, 3·5; tarsus, 1·55.

Adult Female.—Similar to the male. Total length, 14 inches; wing, 7·5.

Young Birds.—Always darker than the adults, and having creamy-whitish, instead of ashy, spots at the end of the dorsal and scapular feathers; the lower back, rump, and upper tail-coverts are plainly barred across with dusky-brown, and the tail-feathers are not only largely notched with sandy-buff on their margins, but have a narrow sub-terminal line of sandy-buff between the ashy tip and the black of the rest of the feathers. The outer web of the primaries has a distinct series of fulvous notches.

Winter Plumage.—Darker than the summer plumage, but not otherwise different.

The variation in size of Wood-cocks is very remarkable, but I quite agree with Mr. Ogilvie-Grant that there is only one species, and that the so-called "light" race is only the young bird; but when this is admitted, the extraordinary difference in size in some individuals cannot be overlooked. Thus a specimen from Cornwall in the British Museum is a perfect dwarf, compared with the generality of British specimens, and has the bill only 2·15 inches in length, and the wing only 6·4, instead of 2·85 and 7·5 inches respectively in averaged-sized birds. Although there are some individuals in the British Museum, which are marked as being females, and equal the males in size, there can, I think, be no doubt that, as a rule, she is a larger bird than her mate.

Nestling.—Covered with velvety down of a rufous colour, with a broad band of chestnut-brown down the centre of the crown, and another down the centre of the back, with three broad transverse bands down the sides of the body; on each side of the crown and dorsal stripe a broad streak of isabelline; a black loral line and a central streak on the forehead also black; under surface of body pale rufous, inclining to isabelline on the abdomen, and with some chestnut patches on the throat and foreneck.

Characters.—The differences between old and young Woodcocks have been well demonstrated by Mr. W. R. Olgivie-Grant in a paper in the "Zoologist" for 1890. The best test, in my opinion, is the uniform whitish outer web of the first primary in the old birds, this being clearly notched all along the outer web in young individuals. These notches gradually disappear and become obsolete; the buff sub-terminal line which separates the black of the tail from the ashy tip is also a sign of immaturity, but as this is retained by many adult birds for some time, it is not so worthy a character.

Range in Great Britain.—Except in some of the most barren portions of our islands, the Wood-cock breeds in the wooded districts, and has considerably increased in numbers as a nesting bird with us of late years, principally owing to the increase of plantations. In Ireland, it is said by Mr. Ussher, to be found breeding in every county. A great migration takes place in spring and autumn, the birds passing over the whole of our islands, even such places as the Orkneys and Shetland Isles, where, however, they do not breed. By the time that the spring migration has set in, many of our resident Wood-cocks have already begun to nest.

Range outside the British Islands.—The Wood-cock is generally distributed over Europe, but does not ascend very far north. In Eastern Russia and Siberia its range does not extend farther than 60° N. lat; in Western Russia to 65° N. lat., and in Scandinavia up to the Arctic Circle. It is found nesting also in Eastern Siberia and the mountains of Japan, as well as in the Himalayas at 10,000 feet; also in the Caucasus and the mountains of Southern Europe. In winter it visits the countries of the Mediterranean, India, Burma, and China, but it breeds, to the south, in the Azores, Canary Islands, and Madeira. It has been once found in the Færoes, but has not been recorded from Iceland or Southern Greenland, though individuals have occasionally straggled to the coasts of North America.

Habits.—The Wood-cock is a very shy and retiring bird, and is but seldom seen in the open, except during the season of migration. I remember an interesting instance of Wood-cock-shooting before breakfast, when Mr. Seebohm, Mr. Frank Nicholson, and myself started off for a walk among the slippery *débris* of rock which lies scattered round the base of Heligoland, when the tide is out. We threw stones into every likely-looking chasm in the rock, and were rewarded by seeing several Wood-cock fly out from their concealment, and sail out sea-wards with an owl-like flight. In this way we procured several in the early morning.

Mr. Howard Saunders writes:—"During the day the Wood-cock rests in dry grassy bottoms, or beneath thick bushes, such as holly or laurel, but at dusk and early in the morning, especially during the breeding-time, the male persistently follows certain tracts along glades in woods—often called 'cock roads'—uttering a deep as well as a whistling note. Similar routes are also traversed by both sexes on their way to and from their feeding-grounds. Worms, when procurable, are devoured in almost incredible quantities, while beetles and other insects, small crustaceans, and even mussels are also eaten; and I have watched a bird obtaining its food under circumstances which, if narrated, would not conduce to a taste for 'trail.' Few birds exceed 15 ounces in weight, though such are on record."

During the day, says Mr. Seebohm, the Wood-cock frequents the outskirts of woods and forests where there is plenty of cover under which it can lie concealed. In the evening it seeks the marshes to feed, but even under the protection of the shades of twilight it is still very cautious in exposing itself to view, and prefers swampy ground, either in the forest or in open places abounding with brushwood and rank vegetation. In its winter quarters, in India, it is described as avoiding stagnant swamps, and only frequenting those where running water is to be found. When disturbed during the day it rises with a whirring sound, occasionally, but not always, uttering a cry which resembles that of the Common Snipe, which may be represented by the syllable *skaych.* When fairly on the wing, its flight is much slower than that of the Common Snipe. The bill is always pointed considerably downwards, as though it were too heavy to be held out straight; the wings are bent, and the general direction of the flight is straight, but occasionally it is varied with curious twists and twinings. The

Wood-cock seldom flies far; as soon as it finds a suitable cover it drops suddenly into it as if shot. Immediately on their arrival in this country the birds sit very close, and are difficult to flush, and may be found concealed under a hedge or ditch, or even in a field amongst turnips or long dried grass. It is said that on migration they generally fly upward to a considerable height, and that they have been seen to alight after an almost perpendicular descent. Much discussion has taken place as to the way in which the Wood-cock manages to remove its young, as it is known to do. The late Mr. St. John has stated that many Wood-cock carried their young ones down to the soft feeding-grounds, and brought them back again to the shelter of the woods before daylight, where they remained during the whole day. The nestlings are now believed to be carried between the thighs of the old bird, and held there by the bill of the parent as it flies.

Nest.—A depression in the ground, plentifully lined with leaves and dead grass. The species is an early breeder, and fresh eggs are procured throughout April, but they have also been found as early as the 3rd of March. Mr. Robert Read observes:—"The Wood-cock will sit very closely on its eggs. I knew of a nest under a juniper bush, in a park beside a path, which was in constant use, but the bird sat there quite undisturbed by the passers-by. The eggs are usually very rounded, but I have a set from Scotland quite pyriform, like those of other Limicolæ.

Eggs.—Four in number, and generally somewhat rounded. The ground-colour varies from stone-grey to warm clay-brown, sometimes with a slight olive shade. The spots are reddish-brown, and they are sometimes clustered round the larger end, and form blotches. The underlying spots are purplish-grey, and are occasionally very large, and form as large blotches as the reddish overlying markings. Axis, 1·6–1·85 inch; diam., 1·25–1·4.

THE TRUE SNIPES. GENUS GALLINAGO.

Gallinago, Leach, Syst. Cat. Mamm. &c. Brit. Mus. p. 30(1816).

Type, *G. major* (Gm.).

There are several differences between the Snipes and Woodcocks; the principal ones being the length of the inner secondaries, which are as long as the primaries, as well as the bare tibia and the number of the tail-feathers, which range from fourteen in the Common Snipe to twenty-six in the Wire-tailed Snipe (*G. stenura*). The Snipes have no bars on the inner webs of the primaries, and Mr. Seebohm has also pointed out that in the Snipes the markings on the head are longitudinal, whereas in the Wood-cocks they are transverse.

I. THE GREAT SNIPE. GALLINAGO MAJOR.

Scolopax major, Gm. Syst. Nat. i. p. 661 (1788); Macgill. Brit. B. iv. p. 364 (1852); Seebohm, Hist. Brit. B. iii. p. 237 (1885).

Gallinago major, Dresser, B. Eur. vii. p. 631, pl. 541 (1876); B. O. U. List Brit. B. p. 165 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 336 (1883); id. Man. Brit. B. p. 555 (1889).

Adult Male.—General colour above black, mottled with sandy-buff, with which the feathers are fringed and barred in an irregular and wavy manner so as to leave large patches of black; the scapulars with broader and whiter edges, so as to form a double line down the back; lower back, rump, and upper tail-coverts sandy-buff, barred with dusky-brown, the ends of the tail-coverts whiter; wing-coverts blackish-brown, the marginal series with ashy fringes, the remainder with conspicuous white tips, before which is a black sub-terminal bar, the inner greater coverts also barred with sandy-rufous; bastard-wing and primary-coverts blackish, tipped with white; quills dark brown, the shafts of the primaries white at the base, the secondaries tipped with white, the innermost being barred with sandy-rufous and resembling the back; tail-feathers bright rufous, with black bases and black bars on the terminal half of the feather, scarcely visible near the tip, the white tips to the feathers gradually increasing in extent, until the four outer ones on each side are entirely white, except for a little black near the base; centre of crown whitish, bordered on each side by a broad band of black, slightly freckled with rufous, and followed by a broad superciliary streak, ashy-whitish in front and fulvescent behind; a dusky streak from the base of the bill to the eye; sides of face whitish, with numerous tiny blackish spots and a dark patch below the ear-coverts; the hind-neck and sides of neck sandy-buff, streaked with black; chin, breast, and abdomen white; the lower throat, fore-neck, and chest pale sandy-buff, with central spots of black on the feathers; the sides of the breast and flanks regularly barred with black; the under tail-coverts sandy-buff, tinged with rufous, and having more or less complete bars of black; under wing-coverts and axillaries white barred with black, the latter very distinctly banded; lower primary-coverts and quills below uniform ashy-brown; bill and feet brown; iris hazel. Total length, 11 inches; culmen, 2·45; wing, 5·55; tail, 2·0; tarsus, 1·35.

Adult Female.—Similar to the male. Total length, 10·5 inches; culmen, 2·5; wing, 5·3; tail, 2·0; tarsus, 1·5.

Winter Plumage.—More sandy-buff than in summer, the buff edges to the feathers of the upper surface broader and more conspicuous; the blackish markings on the fore-neck larger and coarser, and either circular or horse-shoe shaped.

Young.—Much more rufous than the adults, and having the black of the upper parts more uniform, the lateral edges to the scapular feathers not so distinct; the inner greater coverts and inner secondaries regularly barred with black and rufous, the bars being of about equal width; the white tips to the wing-coverts not so distinct and slightly tinged with buff; the sides of the face and hind-neck much more rufous than the adults, and the white upper breast also showing dusky circular bars; the white outer tail-feathers also barred with dusky-brown.

Characters.—The Great Snipe is, as might be supposed from its name, a somewhat larger bird than the Common Snipe, though it has a somewhat shorter bill than the latter species. In full plumage it may be distinguished from the Common Snipe by the conspicuous *white tips* to the wing-coverts, and by the *white outer tail-feathers*. Young birds with the outer tail-feathers barred, are not so easy to tell, but the ground-colour of these feathers is *white* in the Great Snipe, and is *tawny-rufous* in the Common Snipe. The latter has also a white margin to the first primary, and the white tips to the primary-coverts are very small, while the white tips on the secondaries are conspicuous. In the Great Snipe the reverse is the case, for the tips to the primary-coverts are large, and the tips of the secondaries scarcely noticeable. The Great Snipe also has *sixteen* tail-feathers, whereas the Common Snipe has only *fourteen*.

Range in Great Britain.—An accidental visitor, of which a few specimens are killed nearly every autumn, mostly on the eastern and southern coasts, between the middle of August and the middle of October. These autumn arrivals are generally young birds, but an adult has been killed near Yarmouth in spring. Its occurrence in the central and western portions of England is less frequent. In Scotland ten examples have been identified; while three Irish records were admitted up to 1889 in Mr. Howard Saunders' "Manual." One of these was shot in Co. Galway in October, 1888, and another was obtained on Achill Island in November of the same year.

Range outside the British Islands.—The present species breeds in Scandinavia up to 70° N. lat., and is also found nesting more or less sparingly in Holland, Denmark, and Northern Germany, as well as in Poland and Russia. Mr. Seebohm places its range on the Petchora and the Ob at 67° N. lat., but he states that in the Yen-e-sai Valley it does not extend farther north than 66½°. It visits South Africa in winter, passing through the Caucasus and Persia, as well as the Mediterranean countries, on migration.

Habits.—Mr. Seebohm has given an interesting account of the habits of the Great Snipe as observed by him on the Petchora and the Yen-e-sai. "In both of these valleys," he writes, "it was one of the last birds to reach the Arctic Circle, in the former locality arriving on the 3rd of June, and in the latter on the 11th of that month. It migrates at night, singly or in pairs, but, so far as is known, not in flocks. In the pairing-season the males are gregarious, and have a sort of 'lek,' like that of the Ruff, or of many species of Grouse. Late one evening, as Harvie-Brown and I were drifting down the Petchora, we came upon a large party of these birds, making curious noises with their bills, in the long grass on the banks of the river. Sometimes as many as half-a-dozen were on the wing at once, but their flights were very short, and we succeeded in shooting ten of them, which all proved to be males. I saw the same remarkable performance in Siberia, where they were very common in the valley of the Koorayika, and soon after their arrival I used sometimes to watch them in the evening through my binocular. With a little caution I found it very easy to get near them, and frequently, as I sat partially concealed between a couple of willow-bushes, I was able to turn my glass on two or three pairs of these birds all within fifteen or twenty yards of me. They had one very curious habit which I noted : they used to stretch out their necks, throw back the head almost upside down, and open and shut their beaks rapidly, uttering a curious noise like that produced by running the finger along the edge of a comb. This was sometimes preceded by a short flight, or by spreading of the wings and tail. I have never heard the Great Snipe utter any other call or alarm-note. During the breeding-season it is not at all shy, and allows of a near approach ; and when nesting, it almost permits itself to be trodden upon before rising, which it does with a whir of the wings like that of a Grouse, but not so loud. It is a much easier bird to shoot than the Common Snipe, flying much slower and straighter. On the ground it is a very comical-looking object ; plump, short-legged, it shuffles about, half walking, half running, its bill always depressed, and, however intent it may be on feeding, it is ever on the watch for danger, and always tries to keep behind a bunch of rushes or a clump of sedge. It hides in the long coarse grass on the banks of rivers and lakes during the day, and comes out in the open in the evening, if there be any evening where it happens to live, to feed on worms and various small insects. The Great Snipe is a bird of the swamps, but prefers such as have open places of mud or peat, or even sand."

Nest.—According to Mr. Seebohm, the nest is sometimes placed in long grass, but more often in the middle of a hillock of sage or rushes. A small quantity of moss or dead grass is added as a lining to the depression.

Eggs.—Four in number, pear-shaped. The ground-colour is stone-grey or clay-brown, boldly marked with black, over which is spread a reddish lustre ; these black markings clustering chiefly round the large end of the egg, where they form large blotches. The underlying markings are faint purplish-grey, often of good size, and very distinct. Axis, 1·7–1·9 inch diam., 1·2–1·3.

II. THE COMMON SNIPE. GALLINAGO GALLINAGO.

Scolopax gallinago, Linn. Syst. Nat. i. p. 244 (1766); Macgill. Brit. B. iv. p. 368 (1852); Seebohm, Hist. Brit. B. iii. p. 241 (1885); Lilford, Col. Fig. Brit. B. part xxxi. (1895).
Gallinago cœlestis, Frenz.; Dresser, B. Eur. vii. p. 641, pls. 542, 543, fig. 1 (1880); B. O. U. List Brit. B. p. 166 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 342 (1883); id. Man. Brit. B. p. 557 (1889).

Adult Male.—General colour above black, with a broad line of sandy-buff along each side of the back, formed by the broad edges to the scapulars, which are blotched with black; the lower back dusky-blackish; rump and upper tail-coverts tawny-rufous, barred across with dusky-blackish, the long tail-coverts white at the ends; wing-coverts blackish-brown, the marginal ones uniform, the median and greater series spotted with ashy-white at the tips; bastard-wing and primary-coverts blackish, with small white tips; quills blackish, the first primary whitish along the outer web, the secondaries conspicuously tipped with white, the inner secondaries barred with black, and resembling the scapulars; tail-feathers tawny-rufous, black at the base, and tipped with white, before which is a wavy sub-terminal bar of dusky-blackish, the outer feather regularly barred with blackish; crown of head sandy-isabelline along the centre, with a broad black band on each side, followed by an eyebrow of sandy-colour, whiter above the lores, across which, to the eye, is a broad black streak; sides of face white, with a blackish streak across the ear-coverts, which are narrowly streaked with dusky; cheeks and chin white; the throat and chest sandy-brown, mottled with blackish spots and bars; breast and abdomen pure white; sides of body conspicuously barred with dusky-blackish; under tail-coverts more rufescent and barred with blackish; under wing-coverts white, barred with dusky-blackish; axillaries regularly barred with black and white; lower primary-coverts and quill-lining ashy-grey. Total length, 10 inches; culmen, 2·8; wing, 5·2; tail, 2·3; tarsus, 1·2.

Adult Female.—Similar to the male. Total length, 11·5 inches; culmen, 3·0; wing, 5·1; tail, 2·2; tarsus, 1·35.

Young.—Differs from the adult in being more rufous, especially on the throat and neck. The black markings of the back are more broken up and mottled with rufous bars, and the pale outer bands along the scapulars are not so wide. Mr. Seebohm states that young Snipe may be recognised by not having a dark shaft-line on the light tips of the upper wing-coverts, but I have found indications of the latter in quite young birds.

Many ornithologists have supposed that there is a second and more rufous species of Snipe found in England, but I believe that the differences are merely individual, and, in the majority of specimens, the rufous colour is due to immaturity. The curious form known as Sabine's Snipe is apparently only a melanism. It has been found chiefly in Ireland, and Mr. Barrett-Hamilton has written a very interesting paper on the subject in the *Irish Naturalist* for January, 1895. From this it appears that out of about fifty-five examples of "Sabine's Snipe" in collections, no fewer than thirty-one have been obtained in Ireland, twenty-two in England, one in Scotland, while the form has only once been found on the continent of Europe.

Characters.—The distinguishing features between the present species and the Great Snipe have been detailed under the heading of the latter bird.

Range in Great Britain.—The Common Snipe is a plentiful migrant to all parts of the United Kingdom in autumn. It breeds in suitable localities in all three kingdoms, and in the north at considerable elevations.

Range outside the British Islands.—The present species breeds throughout the northern and temperate parts of Europe, but is rarely met with north of 70° N. lat.; while eastwards, it extends to Turkestan and East Mongolia, where a certain number remain to breed. Its southern breeding-range in Europe is said to be the marshes of Northern Italy. It is resident in Iceland and the Færoe Islands, and is said to have occurred in South Greenland. In winter it visits China and Formosa, and the Philippine Islands, as well as the Indian Peninsula, Ceylon, and the Burmese countries. At this season of the year it is also found in the Mediterranean and North Africa, extending to the Azores, Madeira, the Canary Islands and Senegambia, as well as the Nile Valley, and as far as Aden.

Habits.—The Snipe is a bird which is seldom seen in the day unless flushed from its marshy lair, and I only once remember having seen one flying of its own accord in full daylight. Off the beach at Gorleston, near Yarmouth, I was wandering one morning in September, 1885, with a gun under my arm in case any bird came along which I might want for the British Museum, when I saw a cluster of small birds, apparently Dunlins or Stints, flying over the sea at a short distance from the shore. As they came nearer, I could make out a larger bird flying in front, and evidently acting as leader to the smaller fry, of which there were, perhaps, a dozen. As they passed by me at a considerable distance I aimed at the foremost bird, which was about a yard or two in front of the others, thinking that it must be a Knot. My shot told, and the poor bird left his followers to shift for themselves, and turned shorewards, falling on a grassy cliff. When I had ascended the latter I was considerably astonished to find that my victim was a Common Snipe, which had been acting as guide, philosopher, and friend to a party of unsophisticated Dunlins at noonday.

Pairs of Snipe, travelling in company, have been observed crossing the sea on migration, but, as a rule, the bird is found alone, though a goodly company may be in close proximity. Once, no doubt, the marshes in the west of London abounded with Snipe, and close to what is now Bedford Park I have myself seen a Snipe shot within the last ten years, some day to be reckoned as great a marvel as the Ring-Ouzels from Turnham Green and the Nightingale from the country round Bayswater, of which birds specimens are in the British Museum. In the water-meadows and common-lands of the Thames Valley, left moist after the floods, I have known plenty of Snipe to be killed quite close to London, and the way in which they will cling to a locality, day after day, after having been constantly shot at, is as surprising as the way in which they will suddenly disappear from a place in which they have been plentiful the day before, without any apparent reason. Every sportsman knows how, in a favourite spot in the water-meadows, Snipe are almost sure to be found in favourable weather, and how, without being actually gregarious, they get up within a certain distance from each other, and their note of "scape" may be heard from several in the air at once. That they do associate together is certain, however, for I remember my friend, the late Mr. Frederick Bond, telling me how, many years ago, in the days of muzzle-loaders and percussion caps, he was wending his way home by moonlight across the Cambridgeshire Fens, and looking out for an opportunity of discharging one of his still loaded barrels. Crossing over a little bridge which spanned a ditch, he saw, by the light of the moon, a Snipe standing on the edge, and fired at it, only too delighted to have found something at which to let off his gun. On walking to the spot he picked up *eleven* Snipe. The late Mr. Booth also relates how, when he was punt-gunning on a river one winter in the north of Scotland during a severe frost, he noticed that Snipe were collected in numbers along the banks, where the mud was kept soft by the action of the tide. As a novel proceeding, he fired one shot at them with the big gun, but the poor birds were so tame that it could hardly be considered sport, and fowl being plentiful on the water at the time, he left them alone in hopes of renewing their acquaintance on some future day. He discovered, however, when the weather changed, that he had lost his chance, as, after the breaking-up of the frost, not a Snipe could be found within a mile of the spot. The Snipe is always a bird of the swamps both in summer and winter, and is a skulking bird. It feeds largely on worms, slugs, and insects. Its flight is very swift, and when it rises from its concealment it twists and turns in a zig-zag flight until it has got well out of danger. It utters a harsh note when it rises.

With regard to the drumming of the Snipe, various surmises as to the way in which the noise is produced have been hazarded, and Mr. Seebohm has given an excellent note on the subject:—"In the breeding-season the note of the Snipe is rapidly uttered, *tyik-tyuk*, each syllable accompanied by a depression of the head. This note is common to both sexes; but perhaps the most interesting fact connected with the history of the Snipe is the well-known drumming of the male bird during the pairing-season. He may then be seen in broad daylight high in air, wheeling round and round in enormous circles, flying diagonally upwards with rapid beats of the wings, then swooping down an imaginary inclined plane with half-expanded and visibly-vibrating wings, but with outspread tail, uttering a sound which is technically called 'drumming.' The sound is only heard when the bird is descending, but some observers assert that they have heard it proceeding from a Snipe on the ground, or perched on a dead branch. It has been likened to the bleating of a Goat, and bears some resemblance to the suppressed gobble sometimes heard from a Turkey. Great difference of opinion exists as to the means by which this sound is produced. Bechstein and many subsequent writers have argued that it proceeds from the throat. Naumann, Macgillivray, Hancock, Saxby, Jardine, Blyth, and others have maintained that it is caused by the rapid vibration of the wings. Altum, Meves, and most modern ornithologists find the musical note in the rush of air through the stiff feathers of the outspread tail. I have listened to the drumming of the Snipe scores of times with the express purpose of discovering the mode in which the sound is produced, and must confess myself completely puzzled. Arguing from analogy (a very dangerous proceeding, by the way, in ornithology), I should say it was produced by the vocal organs, and is analogous to the trill of the Stints and other Sandpipers. The fact that it appears to begin the instant the bird begins to descend inclines me to think that, after allowance is made for the time it takes for sound to travel, it must really begin before the descent, whilst the bird is not moving very rapidly."

Nest.—This is generally placed in a clump of rushes or sedge, in which is formed the shallow depression lined with dead grass.

Eggs.—Four in number, laid between the middle of April and the middle of May, but in the high north not before June. Occasionally, they have been found in March. Mr. Robert Read writes to me that he has himself found the nest in the latter month in Northumberland, and that on the bare ground, in an exposed site, swept over by every wind that blew. The ground-colour varies from a brownish-clay colour to a pale stone-grey, but in nearly every instance a shade of olive is apparent. The spots are a mixture of reddish-brown, black, and purplish-grey, the latter being the underlying ones. In some eggs the spots are small, and are distributed over the whole surface, while in others they are of good size, forming blotches, which are clustered round the larger end. Axis, 1·5–1·7 inch; diam., 1·0–1·2.

THE JACK-SNIPES. GENUS LIMNOCRYPTES.

Limnocryptes, Kaup. Nat. Syst. p. 118 (1829).
Type, *L. gallinula* (Linn.).

The present genus exhibits an important character in the breast-bone, which has two notches in the posterior margin instead of one, as in the ordinary Snipes and Woodcock. The tail has only twelve feathers, and is decidedly wedge-shaped, besides being uniform in colour.

I. THE JACK-SNIPE. LIMNOCRYPTES GALLINULA.

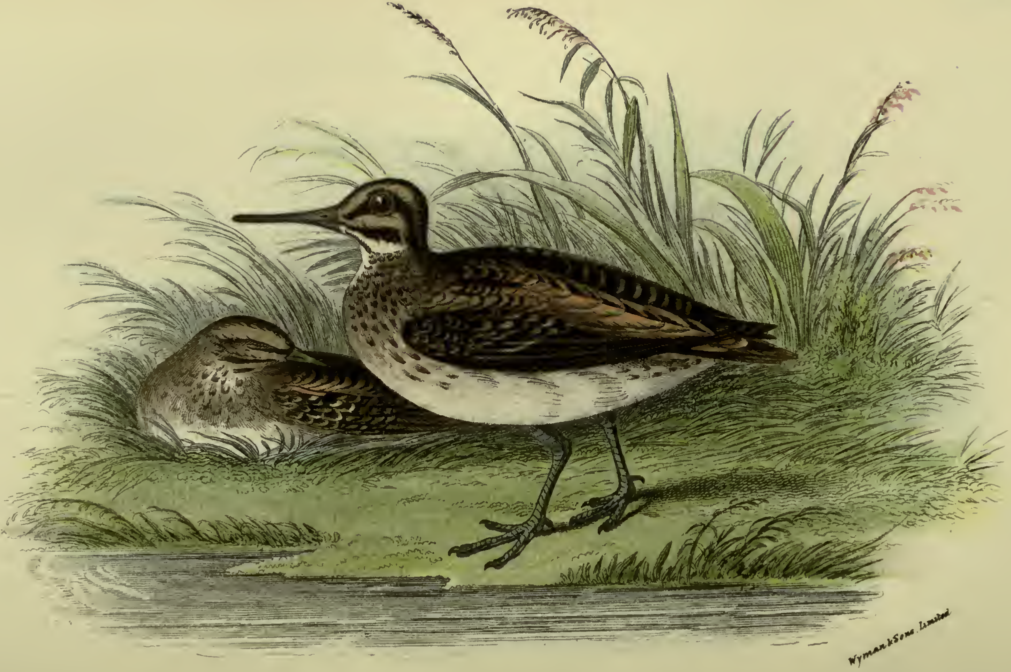
Scolopax gallinula, Linn. Syst. Nat. i. p. 244 (1766); Macgill. Brit. B. iv. p. 380 (1882); Lilford, Col. Fig. Brit. B. part xxx. (1895).
Gallinago gallinula, Dresser, B. Eur. vii. p. 653, pl. 544 (1877); Saunders, ed. Yarrell's Brit. B. iii. p. 351 (1883); Seebohm, Hist. Brit. B. iii. p. 247 (1885); Saunders, Man. Brit. B. p. 559 (1889).
Limnocryptes gallinula, B. O. U. List Brit. B. p. 167 (1883).

(*Plate LXXXVII.*)

Adult Male.—General colour above black, with reflections of glossy-green and purple, and a few rufous markings on the back, mostly in the form of streaks; the sides of the back ornamented with a longitudinal band of ochreous-buff from the sides of the mantle along the scapulars; a second buff band is not so distinct along the parapteral feathers and inner secondaries, being broken up by the black and rufous markings of these feathers; lower back and rump uniform black; upper tail-coverts blackish, slightly freckled with rufous, and having broad margins of ochreous-buff; wing-coverts blackish, with pale rufescent margins, less distinct on the marginal series, which are almost uniform; the greater coverts uniform dusky-brown, with pale fringes; bastard-wing, primary-coverts and quills dusky-brown, with slight white tips to the

PLATE LXXXVI.

BAILLIE'S INSTITUTION GLASGOW


Wyman & Sons, Limited

JACK SNIPE.

primary-coverts, the secondaries pale and more ashy at the tips, the long inner ones mottled like the scapulars; tail-feathers pointed, uniform dusky-brown, with pale sandy-buff margins; crown of head and nape black, scarcely spotted with rufous, and bordered by a broad superciliary band of sandy-buff, the lores and feathers round the eye being blackish; cheeks and ear-coverts dull white, spotted with black, and having a black line along the upper cheeks; chin and upper-throat white; sides of neck and hind-neck earthy-brown, slightly mottled with blackish, and separating the head from the back; lower throat and fore-neck pale rufous-brown, spotted and streaked with black, the sides of the breast and flanks being similarly marked; breast, abdomen, and under tail-coverts pure white; the latter with a few dusky streaks; under wing-coverts ashy-whitish, with dusky bases; axillaries pure white; lower primary-coverts and quill-lining dull ashy. Total length, 7·5 inches; culmen 1·6; wing, 4·35; tail, 1·9; tarsus, 0·9.

Adult Female.—Similar to the male. Total length, 7·5 inches; culmen, 1·6; wing, 4·1; tail, 1·7; tarsus, 0·95.

Winter Plumage.—Scarcely to be distinguished from the summer plumage, except by the greater amount of blackish mottling, the bars on the hinder neck, and the generally more rufescent colour. The pale bands on the back are brighter, but soon fade with exposure and wear to the paler tints of the spring and summer dress.

Range in Great Britain.—The Jack-Snipe is a regular visitant in winter, arriving in October or late in September, and leaving again in March and April. No instance of its breeding within the limits of the United Kingdom has yet been authenticated.

Range outside the British Islands.—The present species breeds in the Arctic Regions from the Dovrefjeld and the tundras of Lapland, above the limits of forest-growth; and as it has been met with in Eastern Siberia, where Middendorf found it on the Boganida, south of the Taimyr Peninsula in 70° N. lat., Mr. Seebohm is probably right in supposing that it nests in the Arctic Regions from the Atlantic to the Pacific. He did not, however, find it breeding either on the Petchora or in the Yen-e-sai Valley. In winter it passes in numbers to the Mediterranean countries, and migrates through Turkestan as well as through Japan and China. It is found in India and Burma during the cold season, and has been known to occur as far east as the Island of Formosa.

Habits.—These differ very little from those of the Common Snipe, with the exception that, when it rises, the Jack-Snipe seldom utters any note. When in Heligoland with the late Mr. Seebohm and Mr. F. Nicholson, I frequently kicked up Jack-Snipe in the potato-fields, and when disturbed from the grass on Sandy Island, I have often seen these birds perch on the heaps of sea-weed, and have shot them sitting on several occasions.

Nest.—The first taking of the nest of the Jack-Snipe was one of the achievements of the late John Wolley in Lapland. I give the following extract from his account published in Hewitson's "Eggs of British Birds":—"It was on the 17th of June, 1853, in the great marsh of Muonioniska, that I first heard the Jack-Snipe, though at the time I could not at all guess what it was; an extraordinary sound, unlike anything that I had heard before. I could not tell from what direction it came, and it filled me with a curious surprise; my Finnish interpreter thought it was a Capercaillie, and at that time I could not contradict him, but soon I found that it was a small bird gliding at a wild pace at a great height over the marsh. I know not how better to describe the noise than by likening it to the cantering of a horse in the distance, over a hard, hollow road; it came in fours in similar cadence, and with a clear yet hollow sound. The same day we found a nest which seemed to be a kind unknown to me. The next morning I went to Kharto Uoma with a good strength of beaters. I kept them as well as I could in a line, myself in the middle, my Swedish travelling companion on one side, and the Finn talker on the other. Whenever a bird was put off its eggs, the man who saw it was to pass on the word, and the whole line was to stand whilst I went to examine the eggs and take them at once, or observe the bearings of the spot for another visit, as might be necessary. We had not been many hours in the marsh when I saw a bird get up and I marked it down. . . . The nest was found. . . . A sight of the eggs as they lay untouched raised my expectations to the highest pitch. I went to the spot where I had marked the bird, put it up again, and again saw it, after a short low flight, drop suddenly into cover. Once more it rose a few feet from where it had settled. I fired! and in a minute had in my hand a true Jack-Snipe, the undoubted parent of the nest of eggs! . . . As usual, I took measures to let the whole party have a share in my gratification before I again gave the word to advance. In the course of the day and night I found three more nests and examined the birds of each. One allowed me to touch it with my hand before it rose, and another only got up when my foot was within six inches of it. I was never afterwards able to see a nest myself, though I beat through numbers of swamps; several with eggs, mostly hard sat upon, were found by people cutting hay in boggy places in July."

Eggs.—Four in number, and pear-shaped. The colour varies very much in the same way as in the eggs of the Common Snipe, but the reddish-brown spotting is more frequent, and I have not seen any of a pale stone-grey colour. Axis, 1·45–1·7 inch; diam., 1·05–1·1.

THE BROAD-BILLED SANDPIPERS. GENUS LIMICOLA.

Limicola, Koch, Syst. baier. Zool. p. 316 (1816).

Type, *L. platyrhyncha* (Temm.).

The single species representing this genus has much of a Snipe in its general aspect, but is, in reality, a Sandpiper, allied to the Dunlins and the Curlew Sandpiper. Like the latter, it has the eye placed in the side of the head like a Dunlin, and not like a Wood-cock or a Snipe. The bill is broad and flat and tapers to an awl-shaped point, but is slightly curved downwards at the tip. It is of considerable length, and is longer than the tarsus.

I. THE BROAD-BILLED SANDPIPER. LIMICOLA PLATYRHYNCHA.

Tringa platyrhyncha, Temm. Man. d'Orn. p. 398 (1815); Macgill. Brit. B. iv. p. 224 (1852); Seebohm, Hist. Brit. B. iii. p. 197 (1885)

Limicola platyrhyncha, Dresser, B. Eur. viii. p. 3, pl. 545 (1876); B. O. U. List Brit. B. p. 167 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 362 (1883); id. Man. Brit. B. p. 563 (1889); Lilford, Col. Fig. Brit. B. part xxiv. (1893).

Adult Male in Winter Plumage.—General colour above light ashy-grey, somewhat paler on the edges of the feathers, which have dusky-brown centres; lower back, rump, and upper tail-coverts blackish, with slight remains of sandy-buff fringes; sides of rump and lateral upper tail-coverts white; wing-coverts rather darker than the back, the marginal ones dark brown, the median series blackish in the centre with hoary-white margins; the greater series dusky-blackish, edged with hoary-grey, inclining to white at the ends, and forming a narrow band across the wing; bastard-wing and primary-coverts black tipped with white, the latter broadly; quills black, paler brown on the inner webs of the primaries, excepting at the tips, which are black; secondaries merely fringed with white near the ends, and with a little white towards the base of the inner web, the inner secondaries ashy like the back, the shafts of all the quills white or whity-brown; centre tail-feathers blackish like the upper tail-coverts, the rest ashy-brown with white shafts and white fringes; crown of head like the back; the lores dusky, surmounted by a broad white streak which is continued into a narrow eyebrow; sides of face white with a few tiny streaks of dusky-brown; ear-coverts uniform dusky-brown; under surface of body white with a few streaks of dusky-brown on the lower throat and sides of breast; under wing-coverts and axillaries white, the marginal-coverts mottled with dusky bases; lower primary-coverts ashy; bill dusky black; legs and feet slaty-black; iris dark brown. Total length, 6·5 inches; culmen, 1·3; wing, 4·1; tail, 1·6; tarsus, 0·8.

Adult Male in Breeding Plumage.—General colour above black, slightly varied with rufous edgings to the feathers, some of those of the mantle, scapulars, inner greater coverts, and inner secondaries having sandy-buff margins, the black forming large sub-terminal spots; crown of the head black, with a sandy-buff lateral stripe; lores black; sides of face rufescent, thickly spotted with dusky-black like the sides of the neck; the ear-coverts rufous and surmounted by a pale buff eyebrow which becomes lighter above the lores; chin and under surface of body white, the throat, fore-neck, and chest thickly spotted with dusky-blackish, those on the fore-neck and chest somewhat arrow-shaped, as they are also along the sides of the body; all these parts slightly tinged with rufous; lateral upper tail-coverts barred with black; tail-feathers as in the winter plumage, but with a more extensive white area on the inner webs. Total length, 6·5 inches; culmen, 1·2; wing, 4·15; tail, 1·5; tarsus, 0·8.

Adult Female in Breeding Plumage.—Similar to the male, but not quite so plentifully spotted underneath. Total length, 6·5 inches; wing, 4·3.

Young Birds.—Very similar to the summer plumage of the adults, being rufous above, mottled with black centres to the feathers, and having very broad whitish margins; centre of the crown black, the outer tail-feathers having a great deal of white on the inner web confining the ashy-grey colour to a broad marginal line; the fore-neck slightly tinged with buff, as also the sides of the upper-breast, these parts being very scantily streaked with brown. During their first winter the pale edges to the feathers become worn off, so that the general aspect of the upper surface is black.

Range in Great Britain.—The number of specimens of the Broad-billed Sandpiper which have been killed in England appear to be seven in number, four of which have been shot on Breydon Broad in Norfolk. One in Mr. Borrer's collection was obtained near Shoreham in Sussex, and Sir Henry Boynton has a specimen from Hornsea Mere in Yorkshire. Mr. Walter Burton also shot one near Rye in August, and of the others, four have been killed in spring and two in autumn, so that it is evident that the species is a rare visitor during the spring and autumn migration. One specimen was procured in Belfast Bay, in Ireland, in October, 1844.

Range outside the British Islands.—The Broad-billed Sandpiper nests on the mountains of Scandinavia as far south as 60° N. lat., and in Lapland, and it probably breeds throughout the tundra regions of Northern Europe and Siberia; but it appears to be everywhere a local bird, and not much is known concerning its distribution during the nesting-season. It passes through the greater part of Eastern and Central Europe during migration, visiting the Mediterranean countries and occurring even as far south as Madagascar. It likewise appears to cross Central Asia to North-western India, and also visits Japan, China, and the Burmese provinces during the cold season.

Habits.—The late Mr. Richard Dann contributed a very interesting article to Yarrell's "British Birds" on the nesting of this species, which he had found in Lulea and Tornea-Lapmark, as well as on the Dovrefjeld in Norway, where it arrived at the latter end of May. It frequented grassy morasses and swamps in small colonies, having the same habitat as the Wood-Sandpiper. On their first appearance, they were wild and shy, and similar in their habits to other Sandpipers, feeding on the grassy borders of small pools and lakes in the morasses. On being disturbed they soared to a great height in the air, rising and falling suddenly like the Snipe, uttering the notes *two-who*, rapidly repeated. As the weather becomes warm, the habits of the species totally change, as it skulks and creeps through the dead grass, and allows itself to be followed within a few yards: when flushed, it drops again a short distance off.

Nest.—The following account is given by Mr. Wolley, who discovered the nest in Lapland:—"The Broad-billed Sandpiper differs from other wading birds in the situation of its nest, choosing open soft places in the marsh, where there is little else than bog moss with a little growth of a kind of sedge, and on a low tuft, just rising above the water, its nest may be found often without much difficulty. . . . But it must not be supposed that this kind of bird-nesting is very easy work. The marshes where the Broad-billed Sandpipers are to be found are few and far between; they are soft and full of water, and often every step is a struggle, whilst the swarms of hungry gnats require almost individual attention. The sun is scorching at midday, but at midnight has not enough power to keep off an unpleasant chill. The country to be gone over is of vast extent, and the egg-season very short; sleep is seldom obtainable; a feverish feeling comes on, and present enjoyment soon ceases. It is just where the thickest clouds of gnats rise from the water, which is so generally spread over the recently thawed land, that the Broad-billed Sandpiper has its eggs, and this is just before midsummer, about the third week in June. Many empty nests are found for one which is occupied, and I suppose them to be of former years, for the moss in which they are usually worked long retains any mark made in it, being hard frozen for more than half the year; they are neatly-rounded hollows, and have a few bits of dried grass at the bottom. The bird sometimes flies, and sometimes runs, off her eggs; and if she has sat for a day or two, she will come back even while men are standing round."

Eggs.—Four in number, and very dark in appearance, the ground-colour appearing pinkish-brown, very thickly mottled and spotted with dark chocolate-brown, generally almost hiding the ground-colour itself. In a pale type of egg the ground-colour is stone-grey or olive-clay colour, the spotting being very minute, and sometimes accompanied by a cluster of blotches at the larger end of the egg. The underlying spots, which are often prominent, are of a violet-grey. Axis, 1·2–1·4 inch; diam., 0·9–0·95.

THE DUNLINS. GENUS PELIDNA.

Pelidna, Cuvier, Regne. Anim. i. p. 490 (1817).
Type, *P. alpina* (Linn.).

The Dunlins have the culmen longer than the tarsus, but they may be distinguished from the Snipes and Wood-cocks by the position of the eye, which is placed much more forward in the head and does not approach the level of the opening of the ear. The bill is slender and straight at the tip, and is not curved downwards; there is a slight tendency to broadening at the end, so that the genus *Pelidna* holds an intermediate position between *Limicola* and *Ancylochilus*. The Dunlins, moreover, differ from the genus *Tringa* in having the middle tail-feathers prolonged and sharpened at the ends; the inner secondaries also are very long, and so nearly equal to the primaries in length, that the difference between these two sets of quills is less than the length of the tarsus.

I. THE DUNLIN. PELIDNA ALPINA.

Tringa alpina, Linn. Syst. Nat. i. p. 249 (1766); Dresser, B. Eur. viii. p. 21, pl. 548 (1876); B. O. U. List Brit. B. p. 169 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 377 (1883); Seebohm, Hist. Brit. B. iii. p. 184 (1885); Saunders, Man. Brit. B. p. 569 (1889); Lilford, Col. Fig. Brit. B. part xxiv. (1893).

Tringa cinclus, L.; Macgill. Brit. B. iv. p. 203 (1852).

(*Plate LXXXVII.*)

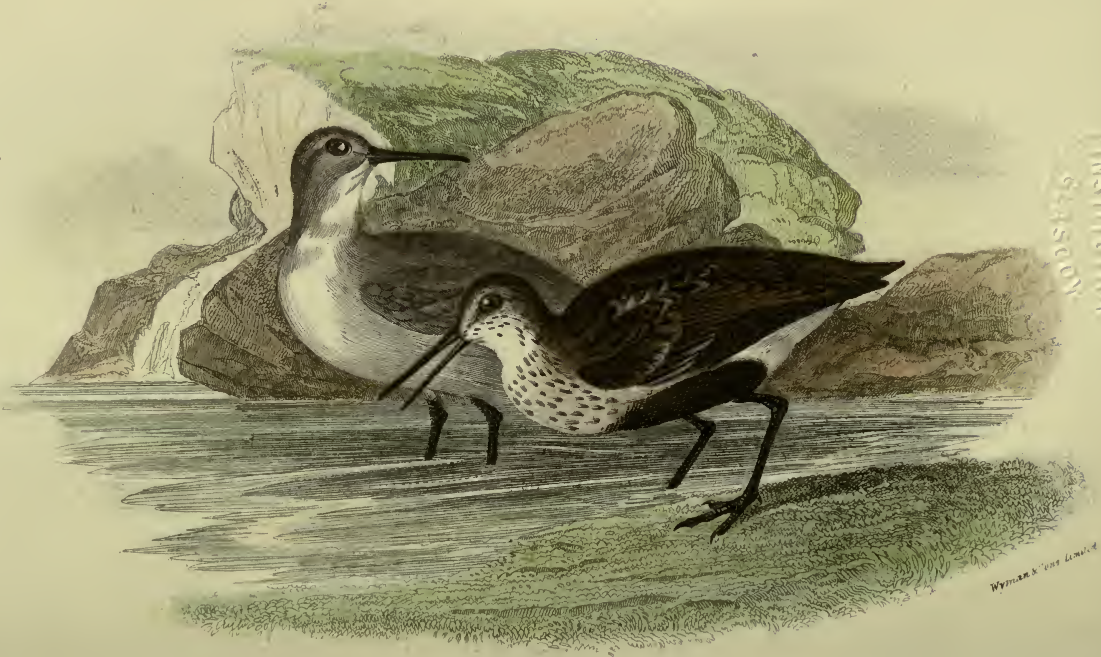
Adult Male in Summer Plumage.—General colour above bright sandy-rufous, mottled with black centres to the feathers; the markings longitudinal on the head and neck, broader on the latter; on many of the feathers of the back and scapulars are remains of whitish edgings; rump dusky-brown, with centres to the feathers; the greater coverts edged with white at the tips; bastard-wing and primary-coverts dark brown, the latter with white tips; quills dusky-brown, with whitish shafts; the secondaries white at base of inner web, and also fringed with white at the ends; tail-feathers light brown, with white shafts and narrow white fringes; lores and a faint eyebrow dull whitish, with tiny streaks of black; sides of face sandy-rufous, lined with small streaks of blackish; the cheeks and throat whiter, but similarly lined; the lower throat tinged with sandy-buff; foreneck and chest white, with mesial streaks of black to all the feathers; remainder of under surface pure white, with a large horse-shoe mark of black on the breast; the lower flanks and under tail-coverts lined with blackish; under wing-coverts and axillaries pure white, the primary-coverts light ashy, like the lower surface of the quills; bill, legs, feet, and claws black; iris hazel. Total length, 6·8 inches; culmen, 1·1; wing, 4·2; tail, 1·9; tarsus, 0·9.

Adult Female in Summer Plumage.—Similar to the male, but having the black horse-shoe mark on the breast less strongly developed. In old birds, however, this is as strongly marked as in the male. Total length, 5·8 inches; culmen, 1·15; wing, 4·7; tail, 1·8; tarsus, 1·0.

Adult in Winter Plumage.—General colour above ashy-brown, with slightly indicated dusky centres to a few of the feathers

PLATE LXXXVII.

BAILLIE'S INSTITUTION GLASGOW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DUNLIN.

especially distinct on the wing-coverts, the greater series tipped with white so as to form a wing-band; primary-coverts and quills dark brown, narrowly fringed with whitish and having white shafts; secondaries for the most part white, with a longitudinal dusky mark towards the end of the outer web; rump and upper tail-coverts brown like the back, the sides of the rump and the lateral tail-coverts pure white; centre tail-feathers also dark brown, the remainder light ashy-brown, fringed with white at the ends and with white shafts; head like the back, with tiny dark centres to the feathers; lores dusky-brown, surmounted by an indistinct whitish eyebrow; sides of face and ear-coverts light brown, with darker shaft-streaks; cheeks, throat, and under surface of body pure white, the lower throat and chest light ashy, with darker centres to the feathers, more distinct on the sides of the chest.

Young Birds.—Above brown, with sandy-rufous edges to the feathers; under surface white, with scattered spots of dusky-brown on the breast; throat whitish; fore-neck tinged with sandy-buff.

Range in Great Britain.—The present species, familiarly known as the "Ox-bird," breeds in Scotland and the northern islands, and in the north of England as far south as Lancashire and Yorkshire, and even in Lincolnshire, though it is nowhere so common in the nesting season as it is in some parts of Scotland. It is also known to breed in Cornwall and Devonshire, where there are moors suited to its habits, but nothing is known of its nesting in any part of Wales. In Ireland, according to Mr. Ussher, the Dunlin breeds "in limited numbers, and locally in Donegal, Londonderry, Westmeath, Wicklow, King's County, Mayo, and Sligo, and probably elsewhere in the midland and northern counties." It is a very common bird on all our coasts in winter, and is sometimes seen on inland waters during migration.

Range outside the British Islands.—The Dunlin may be considered a circum-polar bird as it nests throughout northern Europe from Iceland and the Færoes to Scandinavia and thence across Northern Europe and Siberia to the Pacific. It also nests throughout Arctic America, though the birds from the western side of the latter continent are usually rather larger in size, and have been separated as *Pelidna pacifica*. In winter the Dunlins migrate south as far as California and the West Indies in the New World, and also visit the coasts of China, North-western India and the Mediterranean countries to the Canaries on the west, and as far as Zanzibar on the East African coast. As with so many of the waders, the Dunlin varies considerably in size, and there is a small form found in Europe which breeds along the Baltic and is not uncommon on our English coasts. This is the bird usually known as Schinz's Dunlin (*Pelidna schinzi*). It is probably this small form which has been found breeding in Italy and also in Spain. I have often shot specimens of the small form, and was at one time inclined to consider it a more solitary bird than the common Long-billed Dunlin of our coasts, but I have also found both long- and short-billed birds mixed up in the same flock.

Habits.—In winter the Dunlin is decidedly the commonest of all our shore birds, and is sometimes seen in immense flocks. When the tide is out, little parties may be seen feeding in company on the edges of the shallow pools left by the receding waters, while others are busily engaged in procuring food on the mud-flats. When alarmed, they fly off with a harsh note like the syllable *s-k-r-e-e*, and as one takes wing it is generally joined by several others in the vicinity, which fly off in company. When the tide is full, and the mud-flats are covered, the Dunlins betake themselves to the sea-beach, and congregate in large or small companies, occupying the time in preening their plumage, or in sleeping with their head turned round and the bill hidden under their shoulder-feathers. Even then they are not easy of approach, as they have generally one or two sentinels posted, or are watched over by the wary Ringed Plover. On such occasions they generally fly a little way out to sea and settle again on the shingle at some little distance, and as they wheel off, they go through some evolutions which are interesting to watch, as at one moment the flock becomes almost invisible in the bright sunlight and then reappears as a little dark cloud moving about the surface of the waves. At these times it is not easy to whistle them within hail, but as the hour approaches for the tide to ebb, the Dunlins become much more restless and occasionally little parties will leave the shingle and fly over the mud-flats, settling on any little point which may become uncovered, or thronging on to a sand-spit from which the tide has receded.

In the spring the Dunlins pair before going north, but small flocks of individuals in full summer plumage remain in the south during the nesting season; these are evidently non-breeding birds.

Nest.—A depression in the ground with a slight lining of dead grass, roots, or sometimes a little moss. Mr. Seebohm says that the site generally chosen is in the middle of a tuft of grass, or a bare place on the moor surrounded by heather or rushes. Mr. Robert Read gives the following note:—"I have always found them nesting in the vicinity of water, but they are not particular whether it is salt or fresh. The slight nest is usually built in a patch of grass growing amongst short heather, the eggs being well concealed by the over-hanging grass."

Eggs.—Four in number, pear-shaped. The ground-colour varies from a light greenish or olive-grey to stone-colour or even chocolate. The markings are equally variable, for though the grey underlying spots are sometimes in evidence, they are often obscured by blotches and spots of reddish-brown or even black, which are mostly congregated towards the larger end. As a rule, however, in the Dunlin's egg, the spots are of moderate size and fairly evenly distributed. Axis, 1·35–1·45 inches; diam., 6 95–1·05.

THE KNOTS. GENUS TRINGA.

Tringa, Linn. Syst. Nat. i. p. 247 (1766).
Type, *T. canutus* (Linn.).

The genus *Tringa* contains but two species, the Knot of Europe and the Japanese *T. crassirostris*. The latter breeds in Eastern Siberia and travels south in winter, as far as the Malay Archipelago and Australia, as well as to the shores of North-western India. The length of the culmen exceeds that of the tarsus, and the latter is longer than the middle toe and claw. The bill is stout and has a distinct ridge on the culmen, which widens slightly towards the end. The Knots may be distinguished from the Dunlins by the shape of the tail, which is square, with the middle feathers not prolonged. The inner secondaries also are shorter, and the distance between their tips and the tips of the primaries is more than the length of the tarsus.

I. THE KNOT. TRINGA CANUTUS.

Tringa canutus, Linn. Syst. Nat. i. p. 251 (1766); Macgill. Brit. B. iv. p. 185 (1852); Dresser, B. Eur. viii. p. 77 pls. 555, 556 (1877); B. O. U. List Brit. B. p. 171 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 413 (1883); Seebohm, Hist. Brit. B. iii. p. 174 (1885); Saunders, Man. Brit. B. p. 581 (1889); Lilford, Col. Fig. Brit. B. part xii. (1890).

Adult Male in Winter Plumage.—General colour above ashy-grey, perfectly uniform except on the rump, where there are a few dusky bars; upper tail-coverts white, barred across with black; wing-coverts ashy like the back, except the marginal coverts, which are dusky-brown, the median series also with dusky centres, the greater series tipped with white; bastard-wing and primary-coverts black, the inner ones broadly tipped with white; quills dull ashy-brown, blackish on the outer web and at the tip of the inner web, the shafts white, the inner primaries plainly edged with white near the base of the outer web; the inner secondaries ashy-brown like the back; tail ashy-grey, with whitish shafts to the feathers; crown of head ashy-grey, slightly mottled with dusky centres to the feathers; lores dusky-grey, surmounted by a broad streak of white, continued into a narrow white eyebrow, slightly streaked with dusky lines; sides of face white, with narrow dusky streaks, the upper margin of the ear-coverts ashy-grey; under surface of body white, the chin unspotted, but the throat streaked, and the fore-neck and chest mottled, with dusky spots or bars, the sides of the neck and of the chest dull ashy-brown; the flanks white, with irregular bars or arrow-head marks of dusky-brown; under wing-coverts white, the axillaries with a few dusky bars; lower primary-coverts and quill-lining ashy-grey. Total length, 9 inches; culmen, 1·3; wing, 6·1; tail, 2·3; tarsus, 1·2.

Young Birds.—Very similar to the winter plumage of the adults, being grey above and white below. They may, however, be easily distinguished by the marbled appearance of the upper surface, the feathers being fringed with white, before which is a narrow sub-marginal line of black. There is also a tinge of buff over the throat, breast, and sides of the body, these parts being thickly spotted with dusky-brown, especially on the flanks.

Adult Male in Summer Plumage.—Differs from the winter plumage in having the under surface of the body chestnut, as well as the eyebrow and sides of the face. The whole of the upper surface also is suffused with chestnut, the feathers being black in the centre with chestnut margins, while on the scapulars and long inner secondaries, the chestnut colour is distributed in the form of twin spots, often forming nearly complete bars; the white of the rump and upper tail-coverts is strongly tinged with chestnut, and the black bars are very distinct; bill and feet black; iris dark hazel. Total length, 10 inches; culmen, 1·3; wing, 6·5; tail, 2·3; tarsus, 1·1.

Adult Female in Breeding Plumage.—Similar to the male, but not so strongly suffused with chestnut above, and rather paler chestnut below, with more white on the abdomen than in the male, and having still considerable remains of black bars on the flanks; the axillaries regularly barred with black instead of being white or only slightly freckled as in the male. Total length, 10 inches; wing, 6·6.

Range in Great Britain.—The Knot is a very interesting bird, visiting us in May on its journey northwards, while numbers are observed on the return journey in the autumn; many spend the winter on our coasts, and some few, non-breeding birds, appear never to migrate, as I have known birds in full red plumage to have been shot in June. On the 11th August, 1895, a very early date for their return south, I was startled by hearing their well-known notes above my garden at Chiswick. A large migration was passing over-head at eleven o'clock in the day, which was a very hot one, with a brilliant sun, but the birds were at too great a height to be seen by the naked eye. At all times the Knot seems to be more common on the east of Great Britain, being rare on the western coast of Scotland, but occurring again in numbers along the coast of the West of England and on the Irish coast.

Range outside the British Islands.—The Knot breeds in the Arctic Regions and was found nesting by the explorers in the early part of the century on Melville Island and also on Melville Peninsula, but no eggs seem to have been brought back by them. Colonel Feilden obtained young birds in Grinnell Land, lat. 82° 33′, and Mr. H. C. Hart also procured nestlings in lat. 81° 44′, but no eggs were obtained by these naturalists during the voyage of the "Alert" and "Discovery." No other record of the breeding of the Knot has yet been authenticated, and although it has been observed on migration in many parts of Northern Russia and Siberia, it has not been found nesting in any part of the Old World. Dr. Bunge noticed the species on Great Liakoff Island, the most southerly of the New Siberian islands, on the 6th of July, and shot specimens throughout the greater part of the month, but on the 20th the birds became rarer, and were not recorded after the 31st. Colonel Feilden writes to me :—"If Bunge was correct in the identification of the bird, I see no reason to doubt that the Knot breeds in the New Siberian Islands, for we obtained old birds and nestlings on the 11th of July at Discovery Bay, and again at Floe Berg beach on the 31st of July. There is, of course, some possibility that the Liakoff Knot might be *T. crassirostris* and not *T. canutus*, as the occurrences of the latter bird in Eastern Siberia have been very few." In winter the Knot passes as far south as Australia and New Zealand, and is found, but more rarely, on the coasts of India and Africa. In America it migrates along the Atlantic coast to the West Indies, and has even been recorded from Brazil.

Habits.—On its northward journey in spring, the present species is far less often observed than on its return in autumn, when it is very plentiful. At the former time of year it is also much more shy, and seems intent upon reaching its Arctic breeding home with as much expedition as possible. In the autumn, on the contrary, it is not only much more plentiful, but is very much tamer. It is found either singly or in small flocks in most of our tidal harbours, where its cheerful note, which is very easily imitated, is one of the most familiar to shore-shooters at that period of the year. It often associates with flocks of Dunlins, and rests with them on the shingle at high tide, and feeds with them on the mud-flats when the water has receded. Although, as recorded above, I have been witness to the migration of Knots by day, I have also heard them passing over London by night, and have many times whistled to them from the top of Primrose Hill. In the old days of shore-shooting at Pagham Harbour, when I have been waiting for the dawn, I have seen them arrive from the north at daybreak, and have whistled them down from the sky. These arrivals are nearly always young birds, and they appeared so glad to know that some of their species were in the neighbourhood, that they have often descended to within twenty yards of my boat and commenced to feed ravenously. When seen at such a close distance, the Knot is an extremely pretty bird, and can easily be distinguished from other shore birds by its plump appearance. When flying it utters a musical note like the syllables *tüi-tüi*, *tüi-tüi*.

Nest.—Described as being placed close to a stream and composed of a few leaves and dried grass loosely put together.

Eggs.—Lieutenant Greely—who took an egg fully developed from the body of a female Knot—told Mr. Seebohm that it was a very handsome egg, very boldly blotched, and about as large as that of the Common Snipe. My friend Mr. J. T. Thomasson was recently informed by Captain Bendire that, up to the present time, there is no authentic egg of the Knot in the United States National Museum at Washington. One egg is in the British Museum, to which it was presented by the late Mr. Seebohm, who states that it was from a clutch of four sent with the parent bird from Disco in Greenland to Mr. Versler in Copenhagen, who had received it from Mr. Bolbroe, the original captor. The egg is of an olive stone-colour with the usual spots, and confluent blotches of reddish-brown or black congregating near the large end of the egg and mixed with the under-lying grey markings, which are very prominent. It looks exactly like the kind of egg one might expect the Knot to lay. Axis, 1·6 inches; diam., 1·1.

THE PURPLE SANDPIPERS. GENUS ARQUATELLA.

Arquatella, Baird, B. N. Amer. p. 717 (1858).

Type, *A. maritima* (Gm.).

The genus *Arquatella* is very closely allied to the genus *Tringa*, and is considered by most ornithologists to be identical with it. The Purple Sandpiper, however, is a very short-legged bird, and differs from the Dunlins in having the tarsus shorter than the middle-toe. The tibia-tarsus, too, which is bare in the Dunlins, is feathered down to the joint of the tarsus in the genus *Arquatella*. Besides the ordinary Purple Sandpiper there are two races which are closely allied to it, *A. couesi*, from the Aleutian Islands and Alaska, and *A. ptilocnemis*, from the Prybilof Group.

I. THE PURPLE SANDPIPER. ARQUATELLA MARITIMA.

Tringa maritima, Gm. Syst. Nat. i. p. 678 (1788); Macgill. Brit. B. iv. p. 197 (1852); Seebohm, Hist. Brit. B. iii. p. 192 (1885).

Tringa striata, Linn.; Dresser, B. Eur. viii. p. 69, pl. 554 (1877); B. O. U. List Brit. B. p. 171 (1883); Saunders, ed. Yarrell, Brit. B. iii. p. 408 (1883); id. Man. Brit. B. p. 579 (1889); Lilford, Col. Fig. Brit. B. part xxiv. (1893).

Adult in Winter Plumage.—General colour above sooty-black with a purplish gloss, the feathers having pale margins of dull ashy-grey, less distinct on the lower back, rump, and upper tail-coverts, the longest of which have white tips; sides of rump and lateral upper tail-coverts white, with narrow blackish shaft-lines; wing-coverts like the back and having the same pale fringes; bastard-wing and primary-coverts black, with white tips; quills dusky-brown, black along the outer web and at the tip of the inner one, the secondaries tipped with white and having a considerable amount of white on the inner web, which increases in extent on the inner secondaries, which are entirely white or have only a small mark of black on the outer web; the innermost secondaries black; centre tail-feathers blackish, the remainder ashy-grey, fringed with white and having whitish shafts; head and neck uniform sooty-black, with a faint streak of dull white on the lores and behind the eye; eyelid whitish; sides of face, throat, and fore-neck sooty-brown, the chin whiter; breast and abdomen, as well as the under tail-coverts, white, the breast and sides of the body mottled with dusky-brown centres to the feathers, the flanks streaked with the same colour; axillaries and under wing-coverts pure white; quill-lining ashy-grey. Total length, 7·5 inches; culmen, 1·2; wing, 4·9; tail, 2·1; tarsus, 0·85.

Young Birds.—Resemble the winter plumage of the adults, but are distinguished by the white fringes to the feathers of the upper surface, especially on the wing-coverts, scapulars, and inner secondaries; the chest and sides of the body more plentifully mottled with spots of dusky-black.

Adults in Summer Plumage.—Differ from the winter plumage in being browner below and not so ashy, the fore-neck being either uniform brown or mottled with spots of black, the upper breast and sides of the body being also thickly spotted with black. The upper surface is black, with rufous margins to the feathers instead of ashy or whitish ones; bill dark brown, paler at the base; feet dull yellow; claws black; iris hazel. Total length, 8·5 inches; culmen, 1·5; wing, 5·2; tail, 2·15; tarsus, 0·95.

Characters.—The Purple Sandpiper can always be distinguished by its black rump and upper tail-coverts, combined with the white inner secondaries.

Range in Great Britain.—The present species inhabits the coasts of Great Britain during winter, but is everywhere rather local and is more common in some years than others. Like other waders, individuals of the Purple Sandpiper have been known to remain in Great Britain during summer, and these doubtless have been non-breeding birds. Indeed, the species has been credibly supposed to have bred within our limits, as Mr. Howard Saunders says:—"Young scarcely able to fly have been obtained on the Farne Islands, where they are supposed to have been hatched; while adults have been observed in the Outer Hebrides and other northern localities as late as the end of May. There is even strong presumptive evidence that the bird nests on the high ground in the Shetlands, though identified eggs have not yet been obtained. On the rugged portions of the Irish coast it is met with in winter, and I found it, still in small flocks, on May 15th, in Co. Donegal."

Range outside the British Islands.—The Purple Sandpiper occurs, and probably breeds, throughout the Arctic Regions, retiring only for a comparatively short distance southwards in winter, though some visit at this season of the year the Mediterranean countries and the Azores; and in the New World it occurs on the Great Lakes and the Atlantic coasts of North America as far south as the Bermudas. Even in Western Scandinavia it is found in winter as well as in summer.

Habits.—Of these Mr. Seebohm gives the following account: "Unlike most of its congeners, the Purple Sandpiper loves a rocky coast, a bold shore where the rocks gradually shelve down into the water or are left exposed in huge masses at low tide. It is not often seen on a low sandy beach; but the wide, almost interminable, mud-flats which have such a charm for most wading birds, are occasionally frequented by the Purple Sandpiper. It visits the coast in little parties; but now and then a solitary bird is met with, which will sometimes join a flock of Dunlins or other small Waders. In many of its habits the Purple Sandpiper differs considerably from its congeners. It loves to frequent the shore when the waves are dashing over the rocks, and to seek for its food, literally surrounded by the spray. Nimbly the little creature trips, sure-footed over the wet, slippery rocks, exulting in the wild strife of the waters, and appearing every moment as though the huge angry waves would overwhelm it. Tightly it clings to the boulders until each succeeding wave has broken, when its active search commences. When the gale is at its height it shuns the shore, or seeks safety and shelter amongst the rocks at high-water mark; and Saxby states that in Shetland he has known it to take refuge under the lee of a wall, and to feed within a few yards of his house.

"The Purple Sandpiper is a very tame little bird, often allowing the observer to approach to within a few feet as it stands on the shore. Sometimes it is flushed with difficulty, or merely contents itself with running along the shore just out of arm's length. Saxby states that it is an excellent swimmer, and that he has seen as many as three or four in calm weather swimming at the base of the rocks on which their companions were searching for food. It never seems to dive, however, except when wounded. Sometimes, when flushed, it has been known to alight on the water several yards from shore. The food of the Purple Sandpiper is composed of marine insects, small crustaceans and molluscs, and the seeds of several shore-plants. It obtains most of its food as the tide comes in or ebbs, usually sitting on the rocks at high water, pluming itself, basking in the sun, and waiting for the sea to go down again. The flight of the Purple Sandpiper is rapid, but not usually very high. Sometimes it skims along for a short distance, hovers in the air, or runs along the ground with wings outspread over its back. The note of this bird somewhat resembles that of the Common Sandpiper: it is loud, clear, and shrill, and often repeated, but very difficult to express on paper —a kind of *ince*, not unlike the note of the House-Martin, but louder."

Nest.—A slight depression, lined with a little moss or dried grass.

Eggs.—Four in number, pear-shaped, and resembling the eggs of the Dunlin, from which, however, they can be distinguished by their larger size. The variation in the tint of the ground-colour is just as marked as in that species, the colour ranging from greenish stone-grey to brownish clay-colour, or even reddish-brown. The spots are reddish-brown, sometimes inclining to black, and are thickly distributed over the eggs, in the same manner as in those of the Dunlin. Axis, 1·4–1·5 inch; diam., 1·0–1·1

THE CURLEW-SANDPIPERS. GENUS ANCYLOCHILUS.

Ancylocheilus, Kaup, Natürl. Syst. p. 50 (1829).

Type, *A. subarcuatus* (Güldenst.).

In general appearance the Curlew-Sandpiper—for there is only one representative of the genus *Ancylochilus*—is very like a Dunlin, and as in the genus *Pelidna*, the bill is longer than the tarsus. The shape of the bill, however, is different, being very long and slender and tapering to a point, without any widening before the tip. It has a sharp ridge on the culmen, and the end is decidedly decurved, whence its Latin name of *sub-arcuatus*, and its English name of "Curlew"-Sandpiper, from a certain resemblance of its curved bill to that of a Curlew.

I. THE CURLEW-SANDPIPER. ANCYLOCHILUS SUBARCUATUS.

Scolopax subarquata, Güldenst. N. Comm. Petrop. xix. p. 471 (1774).

Tringa subarquata, Macgill. Brit. B. iv. p. 215 (1852); Dresser, B. Eur. viii. p. 59, pl. 553 (1878); B. O. U. List Brit. B. p. 170 (1883); Saunders, ed. Yarrell, Brit. B. iii. (1883); Seebohm, Hist. Brit. B. iii. p. 180 (1885); Saunders, Man. Brit. B. 403 (1889); Lilford, Col. Fig. Brit. B. part xxv. (1893).

Adult Male in Breeding Plumage.—General colour above deep bay or dark cinnamon-rufous, varied with whitish edges to the feathers, which are mottled with black centres, taking the form of stripes on the head and back, and of cross-bars on the scapulars; lower back dull ashy-brown, with whitish edges; sides of lower back, rump, and upper tail-coverts white, the latter tinged with rufous, and showing a few black bars; wing-coverts brown, with whitish edgings, the greater series tipped with white, forming a wing-bar; some of the coverts rufous like the back, and some of the inner secondaries also rufous on their edges; primary-coverts and quills darker brown, the latter with white tips and white shafts, the secondaries fringed with white, more broadly on the shorter ones, which are white at the base of the inner web; tail-feathers ashy-brown with white fringes and white shafts; head like the back, but showing less distinct blackish centres to the feathers; the hind-neck distinctly hoary, owing to the edgings of the feathers; sides of face and under surface of body rich vinous chestnut with more or less distinct remains of hoary margins to the feathers; vent and under tail-coverts white, the latter tinged with rufous, and having a few black bars; sides of body and flanks pure white, the latter with a few black bars; under wing-coverts and axillaries pure white; lower primary-coverts and under surface of quills light ashy; bill, legs, feet, and claws black; iris hazel. Total length, 7·4 inches; culmen, 1·35; wing, 5·3; tail, 1·9; tarsus, 1·15.

Adult Female in Summer Plumage.—Like the male, but not so richly coloured, the tint of the under surface being duller chestnut and not so vinous. Total length, 7 inches; wing, 4·9.

Adult in Winter Plumage.—Ashy-brown above, slightly mottled with darker centres to the feathers; wing-coverts like the back; quills as in the summer plumage; rump and upper tail-coverts pure white; tail-feathers ashy-brown, fringed with white, with white shafts, a sub-terminal bar of dusky-blackish, and the inner webs having a good deal of white at the base; lores dusky, with a supra-loral streak of white; under surface of body pure white, with tiny lines of dusky-brown on the sides of the face, sides of neck, lower throat, and fore-neck.

Young in First Autumn Plumage.—Similar in general colour to the winter plumage of the adult, but distinguished by the absence of rufous colour on the upper surface. On the under surface the streaks on the fore-neck are almost obsolete, and a fulvescent shade overspreads the fore-neck and chest, in some specimens even extending to the breast itself. On the upper surface it is very similar to the winter plumage of the adult, but has always some distinct pale edgings to the feathers, these being generally fulvescent, while the mantle is decidedly darker, being blackish with pale margins to the feathers.

Range in Great Britain.—The Curlew-Sandpiper is a spring and autumn visitor to our coasts, being much more plentiful in the latter season than in the former, and frequenting more particularly the east coast, both of Scotland and England. In Ireland, Mr. Howard Saunders states that it has been known to remain in the southern counties until November, or even December.

Range outside the British Islands.—The present species occurs in winter in the southern parts of the old world, visiting Australia and Tasmania, the Indian Peninsula, and South Africa. Its nesting habitat, however, is still unknown. It is evident that it does not follow the summer course of the Knot in its western range, as it is not known from the Færoes, Iceland, Greenland, or Spitsbergen. In Scandinavia it is more plentiful in autumn and is rare in spring. Specimens have been observed in June and July at various points of Northern Siberia, and one was obtained by Dr. Murdoch at Point Barrow in Alaska, in

June. The breeding home of the species will probably be found in the New Siberian Islands, as the nesting of the species on Kolguev, where it was thought that the Curlew-Sandpiper might breed, has not been verified by the recent explorations of Mr. Trevor-Battye and the Messrs. Pearson.

Habits.—The Curlew-Sandpiper is often found in flocks on our mud-flats and shingles in the autumn, where they either feed in company or consort with the Dunlins, from which they can hardly be distinguished by an ordinary observer. Occasionally a single bird may be procured, and in the case where it is found solitary, it is generally a young bird which is wending its way south alone, or an old bird which is resting on its way to complete its moult, as is evidenced by the number of red feathers which it has not shed. Its habits and food are so precisely like those of the Dunlin, that no special description is necessary.

Nest.—Unknown.

Eggs.—Unknown.

THE PECTORAL SANDPIPERS. GENUS HETEROPYGIA.

Heteropygia, Coues, Proc. Acad. Nat. Sci. Philad. 1861, p. 191.
Type, *H. fuscicollis* (V.).

The members of this genus are four in number, and three of them have occurred accidentally in Great Britain. They have generally been associated with the Knots and Dunlins in the genera *Tringa* and *Pelidna*, but they differ from these in the shorter bill, which is not longer than the tarsus, and thus they are more closely allied to the Stints (*Limonites*) and the Sanderling (*Calidris*). They differ, however, from the latter genera in having the tarsus longer than the middle toe and claw.

I. BONAPARTE'S SANDPIPER. HETEROPYGIA FUSCICOLLIS.

Tringa fuscicollis, Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 461 (1819); Dresser. B. Eur. viii. p. 15, pl. 547 (1873); B. O. U. List Brit. B. p. 168 (1883); Saunders, Man. Brit. B. p. 567 (1889).

Tringa schinzii (nec Brehm), Macgill. Brit. B. iv. p. 222 (1852); Saunders, ed. Yarrell, Brit. B. iii. p. 373 (1883).
Tringa bonaparti, Seebohm, Hist. Brit. B. iii. p. 189 (1885).

Adult Male.—In appearance like a small Dunlin, but distinguished by the generic characters recorded above, and by the upper tail-coverts being entirely white, so that they contrast sharply with the dark rump and dark centre tail-feathers; bill, feet, and legs greenish-black; iris dusky-brown. Total length, 7 inches; culmen, 0·95; wing, 4·5; tail, 1·95; tarsus, 0·9. The *white upper tail-coverts* of this species distinguishes it at all seasons from any of its near allies.

Range in Great Britain.—An accidental visitor from America, of which some dozen specimens have occurred within our limits. According to Mr. Howard Saunders, "the first British example was shot prior to 1839, in Shropshire, while subsequently three others have been obtained in Cornwall, two in the Scilly Islands, four at Instow in North Devon, two in Sussex, and one at Kingsbury reservoir in Middlesex. There is also a specimen in the Museum at Belfast, which is believed to have been killed near that city."

Range outside the British Islands.—This is a common North American species, which breeds throughout the greater part of the Arctic Regions, becoming rarer in the north-western portion of the new world. In winter it ranges south through Central America and the West Indies to the extreme south of South America.

Habits.—Mr. D. G. Elliot, in his "North American Shore Birds," writes:—"It visits the eastern portion of North America on its migrations, not making a lengthy stay in any place. Coues observed it in Kansas migrating northwards in flocks, and we may suppose it ranges from the Rocky Mountains eastward. Along the Atlantic coast it appears at regular periods, passing northward in May, and back again on its southern journey in July or early in August. It associates with the Semi-palmated Sandpiper (*E. pusillus*), which it somewhat resembles, but from which it is easily distinguished by its greater size. This species is one of the gentlest of all waders, apparently paying little attention to an intruder upon its haunts, but allowing one to approach closely, not even suspending its occupation of searching for food. Should a gun be discharged as the little company draws itself together, the survivors fly a short distance in a compact flock, uttering a low, soft *tweet*, exhibiting the upper- and then under-side of the body as they wheel and turn swiftly, and then frequently alight near the very spot where their companions were slaughtered. When on the wing it is recognisable by its white upper tail-coverts, which are very conspicuous. In Labrador it is very abundant, frequenting the rocky shores covered with sea-weed or green and slippery from the flying spray. It also resorts to muddy flats and shallow pools, into which it wades up to the breast in search of marine insects and various animalculæ, on which it feeds. It is rather a common bird at certain seasons on the shores of Lake Michigan, having been taken in Illinois, and also in Michigan. In the far north it is a straggler at Point Barrow in Alaska, and also breeds on the Mackenzie river. MacFarlane found the nest on the shore of the Arctic Sea, and on the Barren Ground. This was merely a depression in the ground lined with a few decayed leaves, and contained three or four eggs, rufous-drab in colour, blotched with dark brown or black, confluent at the larger end, and measuring 0·35 inch long by 0·95 broad."

II. THE SHARP-TAILED PECTORAL SANDPIPER. HETEROPYGIA ACUMINATA.

Totanus acuminata, Horsf. Trans. Linn. Soc. xiii. p. 192 (1821).
Tringa acuminata, Seebohm, Ibis, 1893, pp. 181-183, pl. v.

Adult Male in Breeding Plumage.—General colour above sandy-rufous, streaked with black down the centre of the feathers, these black centres being much more distinct on the scapulars and inner secondaries, where the rufous margins are very bright; lower back, rump, and upper tail-coverts dusky-black, the lateral ones sandy-rufous barred with black; lesser wing-coverts dull brown; the median-coverts brown with blackish centres and ashy fulvous margins; the greater coverts uniform dusky-brown with white tips; bastard-wing uniform brown; the primary-coverts blackish, the inner ones tipped with white;

quills brown, dusky-blackish at the tips and along the outer webs, the shafts for the most part white, brown towards the bases; the secondaries brown, with a little white at the base of the inner webs and narrowly fringed with white near the tips, the inner ones a little more broadly; tail-feathers ashy-brown, fringed with white round the ends, the centre ones blackish and extended a little beyond the ends of the others; crown of head bright sandy-rufous, minutely streaked with black; lores and a distinct eyebrow white with narrow streaks of blackish; sides of face also white with dusky streaks, the ear-coverts tinged with rufous; under surface of body white, the chin unspotted; fore-neck and chest tinged with sandy-rufous and minutely spotted with dusky-black, which sometimes takes the form of longitudinal streaks or arrow-head bars, the latter form of markings being especially distinct on the sides of the body; breast and abdomen white, the latter with a few linear streaks of black; under wing-coverts and axillaries white, those round the bend of the wing mottled with blackish bases; lower primary-coverts dusky with whitish tips; quills dusky below; bill, black at tip, greenish-yellow at base of mandible; feet and tarsi greenish-yellow. Total length, 7 inches; culmen, 1·1; wing, 5·4; tail, 2·1; tarsus, 1·2.

Adult Female.—Similar to the male. Total length, 7 inches; wing, 5·4.

Adult in Winter Plumage.—Much browner than the summer plumage and without any rufous, except perhaps a slight tinge on the head; under surface of body white, the lower throat and chest ashy-fulvous with a few narrow streaks and lines of blackish, the flanks slightly washed with brown; on the under tail-coverts a few narrow mesial shaft streaks of blackish.

Young Birds.—Much more rufous on the upper surface even than in the breeding plumage, the back much blacker than in any other age of the bird, intermixed with a great deal of rufous and distinguished by the conspicuous whitish edgings to the dorsal feathers, scapulars, and inner secondaries; the wing-coverts with broad margins of sandy-rufous, but the quills the same as in the adults; crown of head distinctly rufous with longitudinal black centres to the feathers; chin white, as also the breast and abdomen, which sometimes have a tinge of buff;

lower throat, fore-neck, and sides of breast sandy-rufous, the fore-neck and chest more ashy and uniform, so that the black shaft-streaks are confined to the lower throat, sides of neck, and sides of breast, being here a little broader.

Characters.—Distinguished from *H. pectoralis* (infrá, p. 247) by the characters given below.

Range in Great Britain.—Two specimens of this species have been procured within our limits. One was obtained near Yarmouth as long ago as September, 1848. It remained for many years in the Norwich Museum, and was supposed to be an example of *H. maculata*. The second specimen was shot near the same place on the 29th of August, 1892, by Mr. T. Ground.

Range outside the British Islands.—There can be no doubt that the present species nests in North-east Siberia, and thence passes on migration by the coasts of Alaska, as well as those of China and Japan, to the islands of the Malayan Archipelago, as far as Australia and New Zealand, occurring also in the Friendly Islands in the Pacific.

Habits.—Mr. E. W. Nelson gives the following note on the species:—"On the north shore of Siberia, near North Cape, we found these birds very common, scattered over damp grass flats near the coast, the 1st of August, 1881. The ground was covered with reindeer tracks, and among these the Sharp-tailed Snipe were seen seeking their food. They were very unsuspicious, and allowed us to pass close to them, as they circled close about us. From their movements, and other circumstances, I judged that this district formed part of their breeding grounds, whence they reach the neighbouring coasts of Alaska in the fall.

"They usually make their first appearance on the shore of Norton Sound the last of August, and in a few days become very common. They sometimes remain up to the 12th of October, and I have seen them searching for food along the tide-line when the ground was covered with two inches of snow. When feeding along the edges of the tide-creeks they may almost be knocked over with a paddle, and when a flock is fired into, it returns again and again."

Nest and Eggs.—Unknown.

III. THE PECTORAL SANDPIPER. HETEROPYGIA MACULATA.

Tringa maculata, Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 465 (1819); Dresser, B. Eur. viii. p. 11, pl. 546 (1878); B. O. U. List Brit. B. p. 168 (1883); Saunders. ed. Yarrell, Brit. B. iii. p. 368 (1883); Seebohm, Hist. Brit. B. iii. p. 201 (1885); Saunders, Man. Brit. B. p. 201 (1889); Lilford, Col. Fig. Brit. B. part. xiv. (1890).

Adult Male in Breeding Plumage—Similar to *H. acuminata*, but never so rufous, with a more blackish head, contrasting with the ashy-brown of the hind-neck. It may always be distinguished from *H. acuminata* by the greater extent of the ashy-fulvous colour, which reaches from the upper throat to the chest, and is thickly and regularly streaked with dusky-blackish, instead of being rufous with black spots; apical half of bill brownish-black, basal half dull greenish-yellow; legs and feet buff. Total length, 8 inches; culmen, 1·1; wing, 4·9; tail, 1·9; tarsus, 1·0.

Adult Female.—Similar to the male. Total length, 8 inches; wing, 4·9.

Adult in Winter Plumage.—Differs very little from the summer plumage, but is browner and with less rufous on the upper surface, the head and neck being of the same colour as the back; the character of the throat and fore-neck is exactly the same as that of the summer plumage.

Young.—Much more rufous than either the breeding or winter plumage, and distinguished by the whitish margins to the scapulous and inner secondaries. The young birds appear to have almost as much striping on the throat and breast as the old ones; in this respect they differ from the young of *H. acuminata*, where the stripes are confined to the lower threat and sides of neck.

Characters.—The Pectoral Sandpiper may be easily distinguished from our other British species by the generic characters above given, and by its brown legs, dark upper tail-coverts, and by the band across the fore-neck and chest.

Range in Great Britain.—This American species has often occurred during autumn and winter, and has been shot also in spring, the presumption being that the bird has remained here during the winter, having wandered from its home during the autumn migration, as so many of the waders do. Some twenty-five instances of its capture were recorded by Mr. Howard Saunders up to the year 1889.

Range outside the British Islands.—The Pectoral Sandpiper breeds in the tundras of North America, and migrates south in winter to South America, where it has been obtained even in Patagonia and Chili. It has not yet been noticed on the continent of Europe.

Habits.—Mr. Nelson gives the following account of the species in Alaska:—"The last of May, 1879, I pitched my tent in a lonely island in the Yukon delta and passed several weeks in almost continual physical discomfort owing to the cold rains and snow-storms which prevailed. However, I look back with pleasure upon the time passed here among the various water-fowl, when every day contributed new and strange experiences.

"The night of May 24th I lay wrapped in my blanket, and from the raised flap of the tent looked out over as dreary a cloud-covered landscape as can be imagined. The silence was unbroken save by the tinkle and clinking of the disintegrating ice in the river, and at intervals by the wild notes of some restless Loon, which arose in a hoarse, reverberating cry and died away in a strange gurgling sound. As my eye-lids began to droop and the scene to become indistinct, suddenly a low, hollow, booming note struck my ear and sent my thoughts back to a spring morning in Northern Illinois, and to the loud vibrating tones of the Prairie Chickens. Again the sound arose nearer and more distinct, and with an effort I brought myself back to the reality of my position and, resting upon one elbow, listened. A few seconds passed and again arose the note; a moment later and, gun in hand, I stood outside the tent. The open flat extended away on all sides, with apparently not a living creature near. Once again the note was repeated close by, and a glance revealed its author. Standing in the thin grasses ten or fifteen yards from me, with its throat inflated until it was as large as the rest of the bird, was a male *T. maculata*. The succeeding days afforded opportunity to observe the bird as it uttered its singular notes, under a variety of situations, and at various hours of the day, or during the light Arctic night. The note is deep, hollow, and resonant, but at the same time liquid and musical, and may be represented by a repetition of the syllables *tōō-û*, *tōō-û*, *tōō-û*, *tōō-û*, *tōō-û*, *tōō-û*, *tōō-û*, *tōō-û*. Before the bird utters these notes it fills its æsophagus with air to such an extent that the breast and throat is inflated to twice or more its natural size, and the great air-sac thus formed gives the peculiar resonant quality to the note.

"The skin of the throat and breast becomes very flabby and loose at this season, and its inner surface is covered with small globular masses of fat. When not inflated, the skin, loaded with this extra weight and with a slight serous suffusion which is present, hangs down in a pendulous flap or fold exactly like a dewlap, about an inch and a half wide. The æsophagus is very loose, and becomes remarkably soft and distensible, but is easily ruptured in this state, as I found by dissection. The bird may be frequently seen running along the ground close to the female, its enormous sac inflated and its head drawn back and the bill pointing directly forward, or, filled with spring-time vigour, the bird flits with slow but with energetic wing-strokes close along the ground, its head raised high over its shoulders and the tail hanging almost directly down. As it thus flies it utters a succession of the hollow booming notes, which have a strange ventriloquial quality. At times the male rises twenty or thirty yards in the air and, inflating its throat, glides down to the ground with its sac hanging below. Again he crosses back and forth in front of the female, puffing his breast out and bowing from side to side, running here and there, as if intoxicated with passion. Whenever he pursues his love-making, his rather low but pervading note swells and dies in musical cadences, which form a striking part of the great bird chorus heard at this season in the north."

Nest.—Placed in some high and dry situation and built in the grass.

Eggs.—Four in number, of the usual pear-shaped form. The ground-colour is pale stone-grey, the spotting being very numerously distributed, and consisting of blackish-brown spots and confluent blotches, as well as tiny dots; the underlying spots are pale grey. Axis, 1·55 inch; diam., 1·05.

THE STINTS. GENUS LIMONITES.

Limonites, Kaup. Natürl. Syst. p. 55 (1829).
Type, *L. minuta* (Leisl.).

The Stints consist of five species, of which three belong to the British list. They are all birds of small size and may be distinguished from the Dunlins by having the culmen as nearly as possible of the same length as the tarsus, while the latter is of about the same length as the middle toe and claw. By this last character they can be distinguished from the Pectoral Sandpipers (*Heteropygia*), in which genus the tarsus is longer than the middle toe and claw.

L. minuta is the species of Europe and Western Asia, and is replaced in Eastern Asia by *L. ruficollis* and *L. sub-minuta*. *L. minutilla* is North American, and *L. temmincki* is found both in Northern Europe and Asia, from the Atlantic to the Pacific. All the species migrate far to the south in winter.

I. THE LITTLE STINT. LIMONITES MINUTA.

Tringa minuta, Leisl. in Bechst. Naturg. Deutschl. Nachtr. i. p. 74 (1812); Macgill. Brit. B. iv. p. 227 (1852); Dresser, B. Eur. viii. p. 29, pl. 549, fig. i. (1871); Saunders, ed. Yarrell, Brit. B. iii. p. 386 (1883); B. O. U. List Brit. B. p. 169 (1883); Seebohm, Hist. Brit. B. iii. p. 204 (1885); Saunders, Man. Brit. B. p. 571 (1889); Lilford, Col. Fig. Brit. B. part xix. (1891).

Limonites minuta, Sharpe, Cat. B. Brit. Mus. xxiv. p. 539 (1896).

Adult in Winter Plumage.—General colour above ashy-brown, slightly darker along the shafts; lower back, rump, and upper tail-coverts blackish-brown; sides of lower back and lateral upper tail-coverts pure white; tail feathers light smoky-brown, the long central ones dark brown, with a very narrow whitish fringe; wing-coverts rather darker brown than the back, with ashy fringes to the median series, the greater coverts tipped with white, forming a wing-band; bastard-wing and primary-coverts blackish-brown, edged with white at the tips; quills dark-brown with white shafts, a few of the inner primaries also edged with white near the base; the secondaries dark-brown, fringed with white at the tips, and having the base of the inner webs white, forming a continuous band with the one on the greater coverts; the long inner secondaries light brown, like the scapulars, with the shafts blackish-brown; crown of head brown, like the back, with darker brown centres to the feathers; forehead and supra-loral region pure white; lores dusky-brown; ear-coverts and feathers below the eye light brown, with narrow streaks of dark brown; above the ear-coverts a streak of white, lined with brown, forming an indistinct eyebrow; cheeks, throat, and under surface of body pure white, or slightly ashy on the throat and fore-neck; sides of neck and upper breast brown, with slightly darker centres or shaft-streaks; under wing-coverts and axillaries white; the coverts round the edge of the wing dark brown with white margins; lower primary-coverts dull ashy-brown, forming an inconspicuous wing-patch; bill, legs, feet, and claws black; iris hazel. Total length, 5·2 inches; culmen, 0·7; wing, 3·8; tail, 1·6; tarsus, 0·8.

Adult Male in Summer Plumage.—Much more rufous than in winter, the whole of the feathers of the upper surface being sandy-rufous with black centres and white margins to many of the scapulars and feathers of the back; head rufous with black centres to the feathers; the neck also rufous streaked with dusky-blackish, these streaks being smaller and less distinct on the sides of the face, which are also rufous; a slight indication of a whitish eyebrow; under surface of body white, tinged with rufous on the throat, the chest pervaded with ashy, and both the throat, fore-neck, and sides of breast mottled with dusky spots in the centre of the feathers. Total length, 6·0 inches; culmen, 0·75; wing, 3·8; tail, 1·4; tarsus, 0·8.

Adult Female in Summer Plumage.—Similar to the male, but somewhat less distinctly spotted on the breast. Total length, 6·0 inches; culmen, 0·7; wing, 3·85; tail, 1·45; tarsus, 0·8.

Young.—Blackish above, with rufous edgings to the feathers, and thus somewhat resembling the summer plumage of the adults, but they may always be distinguished by the more numerous white edgings to the dorsal and scapular feathers, by the ashy colour of the hind-neck, by the absence of spots on the fore-neck and chest, both of which are tinged with isabelline-buff.

Nestling.—Mottled with rufous and black down, the tips of which are silvery-white or sandy-buff, the hind-neck sandy-buff, forming a collar; the crown of the head is black, slightly mottled with rufous and dotted with silvery-white, the black extending in a line on the forehead, which is buff, continued into a somewhat broad eyebrow; a black loral line and a black spot on each side of the hinder crown as well as on the ear-coverts; under surface of body whitish, with a tinge of sandy-buff on the lower throat.

Range in Great Britain.—The Little Stint visits us in autumn and spring, much more frequently at the former season, when flocks are sometimes observed on the eastern coasts. It is never very plentiful in the north, and on our western shores it is practically unknown. To Ireland it is also a rare visitor, and is only found on the eastern shores.

Range outside the British Islands.—The present species breeds on the tundras of Northern Europe from Scandinavia to the Taimyr Peninsular, in Siberia. The late Professor Taczanowski separated the Siberian bird as a distinct race, which he called *Tringa minuta orientalis*, but specimens from Lake Baikal in the Seebohm collection cannot be separated from true *L. minuta*. The Little Stint has been found breeding in Finmark, in the Kola Peninsula, near Archangel, and in the valleys of the Petchora and the Yenesei, as well as by Middendorf in the Taimyr Peninsula, where the first authentic eggs were obtained. In winter the species goes south as far as the Cape of Good Hope, the Indian Peninsula, and Ceylon. In Eastern Siberia the Little Stint is replaced by the Red-necked Stint (*L. ruficollis*), which migrates by way of China and the Malay Archipelago to Australia in winter.

Habits.—In its appearance and habits the Little Stint is a miniature Dunlin, and only its small size distinguishes it from those birds, with which it is also frequently found in company. In the autumn, single birds, and those nearly always birds of the year, are to be observed near the edge of the mud-flats on our tidal harbours. The food of the species is similar to that of the Dunlins and other small Sandpipers, but Mr. Seebohm says that in summer its food also probably comprises berries and small ground-fruits.

The same author has given a most interesting account of the taking of the nest of this species, during the expedition to the Lower Petchora made by Mr. J. A. Harvie-Brown and himself. Mr. Seebohm writes:—"We had walked on together a short distance, when I heard the now familiar cry of a Little Stint behind me, a sharp *wick*, almost exactly the same as the cry of the Red-necked Phalarope or that of the Sanderling. Turning quickly round, I saw the bird flying past, as if coming up from its feeding-grounds; it wheeled round us at some distance and alighted on the ground about eighty yards ahead. We walked slowly up towards it, and stood for some time watching it busily employed in preening its feathers. By-and-bye we sat down. It presently began to run towards us, stopping now and then to preen a feather or two. Then it turned back a few paces, and, lifting its wings, settled down, evidently on its nest. We gave it three minutes' grace, to be quite sure, and then quietly walked up to the place, and sat down, one on each side of the eggs. The bird as quietly slipped off the nest, and began to walk about all round us, now and then pecking on the ground as if feeding, seldom going more than six feet from us, and often approaching within eighteen inches. It was a most interesting and beautiful sight, and the tameness of the bird was almost ludicrous. We chatted and talked, but the bird remained perfectly silent, and did not display the slightest symptom of fear or concern, *until I touched the eggs;* she then gave a flutter towards me, apparently to attract my attention. I turned towards her, and she resumed her former unconcern. I stretched my hand towards her, and she quietly retreated, keeping about two feet from my hand. She seemed so extremely tame that I almost thought for the moment that I could catch her, and getting up on all fours, I crept quietly towards her. As soon as I began to move from the nest, her manner entirely changed. She kept about the same distance ahead of me; but instead of retreating with the utmost apparent nonchalance, she did everything in her power to attract me still farther; she shuffled along the ground as if lame, she dropped her wings, as if unable to fly, and occasionally rested on her breast, quivering her drooping wings and spread tail, as if dying. I threw one of my gauntlets at her, thinking to secure her without damage, but she was too quick for me. Piottuch then fired at her, and missed. He followed her for some distance, but she kept just out of range, and finally flew away. We waited about a quarter of an hour at the nest, talking and making no effort to conceal ourselves, when she flew straight up and alighted within easy shot, and I secured her. The Little Stint seems to be a very quiet bird at the nest, quite different from Temminck's Stint. When you invade a colony of the latter birds, especially if they have young, the parents chase you from the spot, flying wildly round and round and crying vociferously, often perching on a stake or a tree, or hovering in the air and trilling. We observed none of these habits in the Little Stint. So far as we saw, only the female takes part in incubation, and only the female is seen near the nest."

Nest.—Mr. C. E. Pearson, who accompanied his brother's expedition to the Arctic Ocean in 1895, has kindly sent me the following account of the nesting of the species on Kolguev:—"My notes on the breeding habits of the Little Stint were made last summer on the Island of Kolguev, where we had the rare good fortune to take fifteen clutches of eggs, the first being found on July the 6th and the last on the day of our departure, July 15th; each clutch, with two or three exceptions, consisting of four eggs. The nest, as is usual in this tribe, is a very slight affair, a small cup-shaped hollow scratched in the sod, and very sparingly lined with a few dead leaves of Arctic willow, &c. The favourite position appeared to be the lower part of the grassy bank, which sloped down to the river Gobista, but the bird is not at all particular on this point, as we found nests in low boggy ground, in the middle of a clump of Arctic sallow growing six or eight inches high, and in one case right up on the bare tundra, without any protection or a scrap of vegetation near it. All the nests, however, agreed in one point, viz., that they were within fairly easy reach of tidal water, the flats left bare by the receding tide being the birds' favourite feeding-ground; above the tidal limit their place is taken by Temminck's Stint.

"The sitting bird runs a dozen or twenty yards from the nest on being disturbed before taking flight, but one has only to sit down and watch quietly for ten minutes when she will return,* and, after a few preliminary runs, settle down on the eggs; this is the best way to find them, as the nest is very difficult, in fact almost impossible, to discover without the assistance of the old bird.

"The behaviour of the bird when the nest was found, was really extraordinary; it often ran around our feet while we were blowing the eggs, looking reproachfully on the operation; one time sitting on my gun which lay within easy reach of my hand. Then it would sit down in the now empty nest a second or two, after which, pathetic attempts would be made to beguile us from the spot; the whole scene so touchingly pretty as to *almost* induce a hardened collector to give back his treasures."

Eggs.—Four in number, and pyriform in shape. Ground-colour olive-grey to creamy, or dull, brown; the eggs being rather remarkable for the boldness of their spotting, which is chocolate-brown or blackish. Sometimes the spots are reddish-brown and are distributed over the egg, but the darker markings are generally near the larger end, and often form confluent blotches. The underlying spots are light grey. Total axis, 1·1–1·2 inch; diam., 0·8–0·85.

II. THE AMERICAN STINT. LIMONITES MINUTILLA.

Tringa minutilla, Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 466 (1819); Dresser, B. Eur. viii. p. 51, pl. 552 figs. 2, 3 (1871); B. O. U. List. Brit. B. p. 170 (1883); Saunders, ed. Yarrell, Brit. B. iii. p. 396 (1883); Saunders, Man. Brit. B. p. 573 (1889).

Tringa minuta minutilla, Seebohm, Hist. Brit. B. iii. p. 205 (1885).

Limonites minutilla, Sharpe, Cat. B. Brit. Mus. xxiv. p. 548 (1896).

Adult in Winter Plumage.—Similar to that of *L. minuta*, but the size smaller and further distinguished by the distinct ashy-brown of the fore-neck and chest, which is mottled with dark shaft-streaks and spots; bill and feet black; iris dark brown. Total length, 5 inches; culmen, 0·8; wings, 3·55; tail, 1·6; tarsus, 0·75; middle toe and claw, 0·75.

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* It is to be noticed that Mr. Pearson found the *male* to be the sitting bird, as is the case with *L. temmincki*.

Adult Male in Summer Plumage.—Similar to *L. minuta*, but much smaller, and blacker on the upper surface, where the rufous is never so strongly characterised as in *L. minuta;* sides of face dusky-brown with scarcely any tinge of rufous; lower throat and chest ashy, with strongly-marked streaks and spots of blackish-brown, with scarcely any tinge of rufous; bill black; feet dark olive-brown; iris dark brown. Total length, 5·2 inches; culmen, 0·8; wing, 3·4; tail, 1·5; tarsus, 0·75; middle toe and claw, 0·8.

Adult Female in Breeding Plumage—Similar to the male; "bill blackish-brown; feet light clay-brown; iris dark brown." Total length, 5·3 inches; culmen, 0·9; wing, 3·35; tail, 1·4; tarsus, 0·7.

Young.—Resembles the summer plumage of the adult, being black with rufous margins to the feathers, but is distinguished by the white margins to the feathers of the upper surface, and by the absence of spots on the lower throat and fore-neck, which are tinged with buff.

Characters.—The American Little Stint is a smaller bird than *L. minuta*, and the measurements will serve to distinguish it in all stages. In colour of plumage, and in its changes, it is, at all times, similar to the last-named bird, but has a very much more slender bill.

Range in Great Britain.—The present species is only an accidental visitor to our south-eastern coasts, where it has occurred on three occasions—once in Mount's Bay in Cornwall and twice in North Devonshire.

Range outside the British Islands.—*L. minutilla* breeds in the high north of the New World, and migrates south in winter, when it extends its range over the greater part of the South American continent.

Habits.—These, as might be expected, are very similar to those of *L. minuta* and the other small Stints, and call for no special description.

III. TEMMINCK'S STINT. LIMONITES TEMMINCKI.

Tringa temmincki, Leisl. in Bechst. Naturg. Deutsch. Nachtr. ii. p. 78 (1812); Macgill. Brit. B. iv. p. 230 (1852); Dresser, B. Eur. viii. p. 45, pl. 549, fig. 1; 555 fig. 2 (1871); B. O. U. List Brit. B. p. 169 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 398 (1883); Seebohm, Hist. Brit. B. iii. p. 217 (1885); Saunders, Man. Brit. B. p. 575 (1889); Lilford, Col. Fig. Brit. B. part xxxi. (1895).

Limonites temmincki, Sharpe, Cat. B. Brit. Mus. xxiv. p. 555 (1896).

Adult in Winter Plumage.—General colour above ashy-grey, slightly varied with dusky shaft-streaks; scapulars bronzy-brown like the inner secondaries; lower back and rump brown, with a sub-terminal shade of darker brown; upper tail-coverts also dark brown, with longitudinal shaft-streaks of darker brown; wing-coverts brown, with a slight bronzy gloss, the shaft-lines darker with slight indications of paler edges; the greater coverts tipped with white, forming a cross-band on the wing; bastard-wing, primary-coverts, and quills blackish-brown, the shafts of the primaries pale whity-brown, that of the first long primary white; the bastard-primary white, with a brown centre; all the primaries white at the extreme base; secondaries brown, white at base of the inner web, and fringed with white at the ends; the long inner secondaries bronzy-brown, with dusky centres; centre tail-feathers dusky-brown, the remainder ashy-brown with white in the centre, increasing in extent towards the outer feathers, the two external ones entirely white; crown of head ashy-brown like the back; lores dull brown, surmounted by a streak of white, hardly joined to a second streak above the ear-coverts, which forms an indistinct eyebrow; eyelid white; sides of face and ear-coverts ashy-brown, streaked with dusky-brown; the cheeks and throat white, with a few dusky streaks on the cheeks and lower throat; fore-neck and upper breast light ashy-brown; lower breast, abdomen, sides of body, and flanks pure white; thighs brown, white internally; under tail-coverts white; under wing-coverts and axillaries white; the coverts round the bend of the wing dusky-brown with whitish edges, the lower primary-coverts brown, forming a patch; quills below ashy-brown, somewhat lighter along the inner edge; bill brownish-black; feet brownish-grey; iris hazel. Total length, 5·5 inches; culmen, 0·6; wing, 3·8; tail, 1·8; tarsus, 0·7; mid-toe and claw, 0·7.

Adult Male in Breeding Plumage.—Only differs from the winter plumage in being more mottled above, the feathers having black centres and being tinged with rufous, especially on the edges of the feathers, the lower throat and chest having also some distinct shaft-lines; "bill olive-black, lighter olive-brownish at base, especially on the lower mandible; feet olive-yellow, the joints more dusky; iris dark brown." Total length, 5·3 inches; culmen, 0·75; wing, 3·7; tail, 1·8; tarsus, 0·65; middle toe and claw, 0·7.

Adult Female in Breeding Plumage.—Similar to the male, and apparently quite as much mottled. Total length, 5·2 inches; culmen, 0·8; wing, 3·9; tail, 1·85; tarsus, 0·65; middle toe and claw, 0·7.

Young Birds.—These can always be distinguished from the adults, in summer or winter plumage, by the narrow sandy-buff margins to the feathers of the upper surface, and by the ashy-fulvous tinge on the fore-neck, which is devoid of the dusky streaks seen in the adults.

Nestling.—Covered with golden-buff down, spotted with black, and spangled with silvery tips to the down; the black forms a line down the centre of the back; under surface dull white, tinged with buff on the fore-neck.

Characters.—Temminck's Stint is easily recognised from the other species of the genus *Limonites* by its smaller size and *white* outer tail-feathers.

Range in Great Britain.—Like the Little Stint, the present species visits us in spring and autumn as it passes to its northern breeding-grounds, or to its winter home in the south. It is, however, not nearly so often observed as the Little Stint, and is somewhat irregular in its visits, being generally observed singly. It has been doubtfully recorded from Caithness, and appears seldom to visit Ireland, as both the Scotch and Irish records are not altogether satisfactory. On the west coast of England, too, it has not been often met with, and the principal counties where the species has been observed are those of the east coast, though it has been found also along the entire south coast, and has been obtained on several inland waters.

Range outside the British Islands.—Temminck's Stint breeds in Northern Europe and Asia, above the limits of forest growth, but in countries further west than those frequented by the Little Stint, so that its eggs have never been so rare in collections as those of the latter bird. In winter it visits the Mediterranean countries and extends to North-eastern Africa and to Senegambia, but does not go so far south in the African continent as *L. minuta*. It also passes the winter in the Indian Peninsular, and also migrates by way of China to the Burmese provinces.

Habits.—On the few occasions on which I have met with this species in England I have always found single individuals, and those young birds. There was nothing in their ways to distinguish them from the Little Stint, but according to Mr. Seebohm, there is considerable difference in the habits of the two species in their Arctic breeding-homes, and he says that Temminck's Stint is less exclusively a marine bird than *L. minuta*. "I first made the acquaintance of Temminck's Stint," he writes, "at Tromsö, on the west coast of Finmack, where it was very common. These charming little birds were in full song in the middle of June. It was a most interesting sight to watch them flying up into the air, wheeling round and round, singing as vigorously, and almost as melodiously, as a Skylark. Sometimes they were to be seen perched on a rail or a post, or even on the slender branch of a willow, vibrating their little wings like a Wood Wren, and trilling with all their might; and often the song was uttered on the ground, as they ran along the short grass with wings elevated over the back. The song of this bird is not unlike that of the Grasshopper Warbler, but is louder and shriller; its usual call-note is a spluttering but very distinct *pt-r-r-r*."

Nest.—Mr. Seebohm observes:—"It can scarcely be said to breed in colonies, but I have frequently found several nests within a few yards of each other. They are mere depressions in the ground, lined with a little dry grass, and are seldom far from water. They are not difficult to find, the sitting bird betraying its treasures by its peculiar flight. When the nest is discovered, like the Little Stint, the bird appears to assume an unnatural tameness, walking about and feeding close to the observer. The nest is often in longish sedge or rushes, and less frequently in short grass." The male is said to be the parent which hatches the eggs.

Eggs.—Four in number. As a rule paler than in *L. minuta*, and with the markings rather smaller and less distinct. The ground-colour varies from a coffee-brown to a greyish or olive stone-colour. The spots are reddish-brown or dull chestnut, sometimes very minute, in the case of the stone-coloured eggs, but in other instances the markings are bolder and somewhat confluent towards the larger end of the egg. The large spots are often distributed over the egg in equal variety, and the underlying spots are grey, and are often as prominent as the overlying ones. Axis, 1·05–1·2 inch; diam., 0·75–0·8.

THE SANDERLINGS. GENUS CALIDRIS.

Calidris, Illiger, Prodromus, p. 249 (1811).

Type, *C. arenaria* (Linn.).

The well-known Sanderling is the single representative of the genus *Calidris*, which may be described as a three-toed Sandpiper, for it belongs to the same group as the Stints and Pectoral Sandpipers, but is distinguished from all of them by the absence of the hind-toe. The bill is somewhat stout, and the culmen is about equal in length to the tarsus. The range of the genus will be found in detail below under the heading of the species.

I. THE SANDERLING. CALIDRIS ARENARIA.

Tringa arenaria, Linn. Syst. Nat. i. p. 251 (1766).
Calidris arenaria, Macgill. Brit. B. iv. p. 237 (1852); Dresser, B. Eur. viii. p. 101, pls. 559, 560 (1877); B. O. U. List Brit. B. p. 172 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 420 (1883); Seebohm, Hist. Brit. B. iii. p. 221 (1885); Saunders, Man. Brit. B. p. 583 (1889); Sharpe, Cat. B. Brit. Mus. xxiv. p. 526 (1896).

Adult Male in Winter Plumage.—General colour above light ashy-grey, with more or less distinct hoary white edgings to the feathers, and obsolete blackish shaft-stripes, somewhat more distinct on the lower back and rump; scapulars like the back; sides of lower back and rump white; upper tail-coverts blackish, edged and tipped with white, the lateral ones entirely white; lesser wing-coverts blackish; median ones ashy, broadly edged with white, and with a blackish shaft-line; greater coverts blackish, narrowly edged and broadly tipped with white, forming a broad white band across the wing; bastard-wing and primary-coverts blackish; the outer primaries narrowly, but the inner ones broadly, tipped with white; quills with white shafts, and a broad white base to the feathers; the secondaries edged with white at the tip; the primaries ashy-white for the greater part of the inner web, the elongated inner secondaries white on both webs; centre tail-feathers ashy-grey, blackish towards the tips, with white shafts and margins to the feathers; remainder of tail-feathers dusky-brown, whitish on the inner webs, margined externally and having white shafts; crown of head like the back; a broad frontal band, lores, eyebrow, sides of face, and under surface of body pure white; sides of neck light ashy-grey like the back; under wing-coverts and axillaries pure white; quills below dusky whitish along the inner web; bill and feet olive-black; iris dark brown. Total length, 7 inches; culmen, 1·05; wing, 4·75; tail, 1·8; tarsus, 0·9; middle toe and claw, 0·7.

Adult Male in Summer Plumage.—Differs from the winter plumage in being mottled and not uniform, the upper surface being cinnamon-rufous, mottled with black centres to the feathers, which have hoary whitish or ashy edges; the inner secondaries cinnamon-rufous like the scapulars and back; sides of lower back and lateral upper tail-coverts pure white; sides of face, throat, and sides of breast deep cinnamon-rufous, mottled with black centres to the feathers; rest of under surface white. Total length, 6·5 inches; culmen, 0·9; wing, 4·9; tail, 1·9; tarsus, 0·9; middle toe and claw, 0·75.

Adult Female in Summer Plumage.—Similar to the male, but has not quite so much bright rufous in the plumage, the fore-neck being barred with blackish. Total length, 8 inches; culmen, 1·05; wing, 4·9; tail, 1·95; tarsus, 1; middle toe and claw, 0·8.

Young.—Somewhat similar to the winter plumage of the adult, but not so uniform above; the entire under surface of body pure white, as also the forehead and sides of face, but the centre of the forehead mottled with blackish to the base of the bill, and with a dusky streak between the bill and the eye, as well as along the upper edge of the ear-coverts; on the sides of the breast and on the fore-neck there is generally a tinge of vinous buff or vinous; the sides of the upper breast and the sides of the neck are distinctly spotted with black. The upper surface is for the most part black, mottled with spots of white or sandy whitish, these spots being mostly terminal on the back and scapulars; the lower back, rump, and upper tail-coverts ashy, with a sandy-buff tip, and a sub-terminal spot of black, and fringed at the tips with a narrow blackish line, giving the rump the appearance of being lined transversely with black; the head is also blackish, varied with brown or whitish edges to the feathers, and forming a more or less distinct cap, which is separated from the mantle by the light colour of the hind-neck, which is ashy, streaked with dusky-brown; wings much as in the winter plumage of the adult, but the greater and median coverts, as well as the inner secondaries, mottled like the back.

Range in Great Britain.—The Sanderling is a frequent visitor to our coasts in the autumn, and a few are said to remain during the winter. The migration, consisting of old as well as of young ones, commences about the middle of August. In spring, birds in summer plumage are noticed on their return journey from April to June, but at this season of the year they are less frequently observed.

Range outside the British Islands.—As regards its breeding-range, the Sanderling is decidedly a circum-polar species and probably breeds in most portions of the Arctic tundra, although its eggs are still very rare in collections. It was found nesting by Sabine on the Parry Islands in the early part of the century, but no eggs appear to have been brought back. Colonel Feilden procured two eggs in Smith's Sound (Lat. 82° 35′) on the 4th of June, 1876, while eggs and nestlings of the species have been found by the German Arctic expedition on Sabine Island in Eastern Greenland, and on the west side nestlings have been captured near Godhaab and also in Lat. 81° 38′ N. by Dr. Bessels, of the "Polaris." Mr. Howard Saunders, from whose "Manual" I have gathered the above records of facts, sums up the breeding range as follows:—"Mr. MacFarlane killed a female from the first authenticated eggs on the barren grounds near Anderson River. Westward, it ranges to North Alaska, and, following up its circum-polar distribution, it has been found on the Liakof Islands, Taimyr Peninsula, in the Yenesai delta, on Waigats and Novaya Zemlya, and it probably breeds near the mouth of the Petchora."

Habits.—When seen at large, the Sanderling bears considerable resemblance to the Dunlin, and might be taken for that bird by anyone who is unaccustomed to its appearance and ways. The generally whiter look of the Sanderling, however, will distinguish it, as a rule; its pure white breast giving it a lighter appearance than the Dunlins, with which it often associates. It is also found in flocks of considerable size, consisting entirely of its own species, and isolated individuals are also often seen running about on the margins of the pools left in the sand by the receding tide. The species is, indeed, very often to be found on the extreme margin of the tide, running about on the edge of the water, and actively picking up its food, which consists of tiny molluscs, sea-worms, &c. Colonel Feilden states that in Grinnell Land he found it, like the Knot, feeding on the buds of *Saxifraga oppositifolia*, and on insects. The note uttered by the bird as it flies off is like the syllable *wick*, very different from the "skreaking" note of the Dunlin.

Nest.—The one which Colonel Feilden found in Grinnell Land was discovered by him on the 24th of June, at a height of several hundred feet above the sea; it was situated on a gravel ridge and was merely a depression in the centre of a recumbent plant of Arctic Willow, and was lined by a few dead leaves and catkins. The nest found by Mr. MacFarlane, near the Anderson River in Arctic America, was lined with a little dried grass and leaves.

Eggs.—Four in number. Colonel Feilden's specimen in the British Museum is of a pale olive-brown ground-colour, with faint spots and mottlings of brown, with violet-grey underlying spots, very indistinct. All the spots and mottlings are very slightly indicated. Axis, 1·4 inch; diam. 1·0.

THE BUFF-BREASTED SANDPIPERS. GENUS TRINGITES.

Tringites, Cat. J. f. O. 1856, p. 418.
Type, *T. sub-ruficollis* (Vieill.).

In most of the Snipes and Sandpipers the bill is longer than the tarsus, but in the present genus the bill is very short and does not equal the tarsus in length. The peculiar black marbling on the inner web of the quills is also a peculiar feature of the genus, which contains but a single American species, which sometimes strays to Europe, and thus finds a place within the British List.

I. THE BUFF-BREASTED SANDPIPER. TRINGITES SUB-RUFICOLLIS.

Tringa subruficollis, Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 465 (1816).

Tringa rufescens, Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 470 (1819); Macgill. Brit. B. iv. p. 194 (1852); Lilford, Col. Fig. Brit. B. part xix. (1891).

Tringites rufescens, Dresser, B. Eur. viii. p. iii. pl. 561 (1876); B. O. U. List Brit. B. p. 172 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 435 (1883); Seebohm, Hist. Brit. B. iii. p. 222 (1885); Saunders, Man. Brit. B. p. 587 (1889).

Tringites sub-ruficollis (Vieill.), Sharpe, Cat. B. Brit. Mus. xxiv. p. 521 (1896).

Adult Male.—General colour above mottled, the feathers being black, with sandy-coloured edges, the scapulars like the back; the lower-back, rump, and upper tail-coverts like the rest of the back, but the sandy margins deeper in colour and not so distinct, the lateral upper tail-coverts being whitish, with a sub-terminal line of brown; outer lesser wing-coverts black, fringed with white; the remainder of the coverts brown, with blackish centres and pale edges, the greater series with some irregular sub-terminal lines of blackish; bastard-wing, primary-coverts, and primaries brown, tipped with white, with a sub-terminal shade or bar of black, the inner webs marbled with black; the secondaries white, marbled with black near the ends and having a black sub-terminal bar, the long inner secondaries blackish, with broad sandy-buff edges; centre tail-feathers blackish-brown, the remainder pale ashy-brown tipped with white, before which is a broad sub-terminal bar of black, the outer feathers with other interrupted bars of black; crown of head like the back, but the black markings smaller than on the latter; base of forehead, lores, a narrow eyebrow, sides of face, and under surface of body rufescent buff, the feathers slightly obscured by whitish margins; the chin whitish; sides of upper breast spotted with black, the centres of the feathers streaked and spotted with black; under wing-coverts white, the inner ones beautiful rufescent buff; axillaries white; lower primary coverts marbled with black; quills below white, marbled with black along the inner web; bill dull olive-green, dusky towards the point; feet dull yellowish-green, claws dusky; iris hazel. Total length, 8 inches; culmen, 0·95; wing, 5·1; tail, 2·4; tarsus, 1·2.

Adult Female.—Similar to the male in colour, but the black marblings on the inner web of the primaries not so distinct. Total length, 7·5 inches; wing, 5.

Young Birds.—Differ from the adults in having whitish edgings to the feathers of the upper-surface; the lower back, rump, and upper tail-coverts with dark sandy-buff margins; the black sub-terminal bar on the primary-coverts and bastard-wing not so distinct, and the secondaries nearly uniform ashy-brown, with white towards the base of the inner web, but only a little black marbling near the ends; the black spots on the sides of the breast very minute, and the black marbling on the lower primary-coverts and inner webs of quills much less distinct than in the adults.

Characters.—The Buff-breasted Sandpiper may always be distinguished by the black freckling on the inner webs of the primaries.

Range in Great Britain.—About sixteen authentic occurrences of the Buff-breasted Sandpiper in England are admitted by Mr. Howard Saunders. Nearly all of them have taken place in autumn, with the exception of a male bird said to have been killed at Formby, in Lancashire, in May, 1829; while the only instance of the occurrence of the bird in Europe, outside the

British Islands, also took place in May, when a specimen was obtained on Heligoland. The British record is as follows:—Cambridgeshire 1, Norfolk 4, Sussex 1, Cornwall and the Scilly Islands 4, Lundy Island 1, Cumberland 1, Dublin 1, Belfast 2.

Range outside the British Islands.—This species breeds in Arctic America and winters to the South, ranging as far as Amazonia, Brazil, and Paraguay.

Habits.—These, says Mr. D. G. Elliot, "resemble those of Bartram's Sandpiper (*Bartramia longicauda*), and like that bird it prefers fields and grassy plains rather than the wet and swampy lands frequented by other Sandpipers. During the breeding season they indulge in curious movements, one of which is to walk about with the wing stretched out to its fullest extent and held high in the air. Two will spur like fighting cocks, then tower for about thirty feet with hanging legs. Sometimes one will stretch himself to his full height, spread his wings forward and puff out his throat, at the same time making a clucking noise, while others stand around and admire him. They are silent birds at all times, and, the breeding season over, they quietly disappear, never assembling in flocks, and by the beginning of August all have gone south. When fired at, this Sandpiper will fly but a short distance, performing a half circle along the shore, and alight again near to the place from which it started, or, if on the plain, drop down again at a little distance and run about seeking for insects, without exhibiting any signs of alarm. Its note is low and weak, merely a *tweet* once or twice repeated."

Nest.—Is like those of most waders, merely a depression in the ground, lined with a little moss.

Eggs.—"Four in number, usually deposited with the small ends down. They are ashy or olive-drab with stone-grey underlying markings, smaller at the pointed, larger and more confluent at the rounded, end."

THE TATTLERS. SUB-FAMILY TOTANINÆ.

The Tattlers agree with the Snipes and Sandpipers in having the nostril produced nearly to the end of the bill, and they have the tarsus transversely plated with scales both before and behind. They differ from the Snipes, however, in having a distinct web connecting the base of the outer toe with that of the middle one, and a smaller web connecting the inner toe with the middle one, so that the toes are not distinctly cleft to the base, as is the case with the Snipes and Sandpipers.

THE LONG-TAILED TATTLERS. GENUS BARTRAMIA.

Bartramia, Less. Traité d'Orn. p. 553 (1831).

Type, *B. longicauda* (Bechst.).

From the other Tattlers the genus *Bartramia* differs in the following characters. The bill is short, and the tail is rather long, so that the latter exceeds the length of the culmen. The tarsus, on the other hand, is decidedly long, and measures more than the length of the bill. The bare part of the tibia is extensive, and is equal to half the length of the tarsus. The tail, moreover, is peculiar in shape, being long and graduated, the outer feathers falling short of the middle ones. There is a distinct thickening of the end of the bill, which has a dertral swelling, as in the Plovers; the feathers of the chin also are produced forwards, so as to extend considerably beyond the line of the forehead.

I. BARTRAM'S TATTLER. BARTRAMIA LONGICAUDA.

Tringa longicauda, Bechst. Kürze Uebers. Latham, p. 453, pl. 184 (1811).

Actiturus longicaudus, B. O. U. List Brit. B. p. 173 (1883).

Bartramia longicauda, Saunders, ed. Yarrell's Brit. B. iii. p. 440 (1884); id. Man. Brit. B. p. 589 (1889); Sharpe, Cat. B. Brit. Mus. xxiv. p. 509 (1896).

Totanus bartrami, Seebohm, Hist. Brit. B. iii. p. 110, pl. 32 (1885).

Adult Male.—General colour above mottled, the feathers being black, with sandy-buff or whitish edges, the scapulars barred with black; lower back and rump uniform black; central upper tail-coverts also blackish, the lateral ones sandy-buff with more or less complete black bars, irregular on the inner web; lesser wing-coverts blackish-brown, with sandy margins; median and greater-coverts sandy-buff in appearance, the feathers ashy-brown, notched with sandy-buff, and barred with black; bastard-wing, primary-coverts, and primaries uniform blackish-brown; the secondaries dark brown, notched with white, minutely on the outer web, and more deeply on the inner one; the long inner secondaries, like the scapulars, barred with black, and notched and tipped with white; centre tail-feathers ashy-brown, barred with black, the sub-terminal bar broader than the others; remainder of the feathers tawny-buff, broadly tipped with whitish, before which is a broad sub-terminal bar of black, the feathers having also some narrower bands of black, not regular or co-terminous; crown of head blackish, with a mesial streak of sandy-buff, all the feathers also edged with sandy-buff; hind-neck sandy-buff, narrowly streaked with black; sides of face and ear-coverts sandy-buff, with narrow streaks and spots of black; cheeks and throat pure white; lower throat, fore-neck, and chest tawny-buff, the feathers centred with triangular spots of black, taking the shape of irregular bars on the latter; breast and abdomen creamy-white, the sides of the body and flanks barred with blackish-brown; thighs and under tail-coverts uniform isabelline-buff; under wing-coverts and axillaries white, regularly barred across with black; quills below ashy, with numerous bars and notches of white along the inner web; bill yellowish-green, the tip dusky, the edges towards the base yellow; legs and tarsi light yellowish-grey, toes rather darker, claws brownish-black; iris dark hazel. Total length, 11 inches; culmen, 1·15; wing, 6·5; tail, 3·3; tarsus, 1·75.

Young.—Similar to the adults, but the buff on the head, jugulum, wings, &c., much deeper; the streaks on the fore-neck and jugulum much less distinct, and the back plain black, the feathers bordered with buff.

Range in Great Britain.—Eight records of the occurrence of this American species within our limits are considered to be authentic. Although strictly a bird of the New World, it appears to wander considerably during its autumn migration, and has even been found in Australia. In England it has occurred between October and December in the following counties: Warwickshire, Cambridgeshire, Somersetshire, Cornwall (twice), Northumberland, and Lincolnshire, while one instance of its capture in Ireland has been noted. The details of these occurrences are fully given in the "Manual" of Mr. Howard Saunders.

Range outside the British Islands.—Bartram's Tattler has been killed in Italy, and also on the Island of Malta. Its breeding home is in temperate North America, where it ranges to Alaska; it seldom occurs on the Pacific coast on migration, but follows the line of the Central and Southern United States to Central America and the West Indies, and thence south to Buenos Ayres on the east and to Chili on the western side of South America.

Habits.—Mr. D. G. Elliot, who writes of this species as the "Upland Plover," gives the following note:—"It is a bird of the plains and uplands, rarely seen near water, into which it seldom, if ever, wades; and in its habits is more of a Plover than a Sandpiper, frequenting grassy fields and prairie-like stretches, hunting with active steps the insects that form its chief means of subsistence. . . . . It walks well and gracefully; and when standing erect, as it watches some suspicious object, with its slender neck stretched to its full extent and topped by the well-shaped head, the bird seems much taller than it really is.

"The note of the Upland Plover is a loud, long, yet soft whistle, and can be heard for a considerable distance. As one is walking over the grassy plain, there falls upon his ear this distinct cry, coming from some unknown locality. He stops and listens, and again, clear and soft, the note is borne to him, this time distinguished as from above. He looks up, and sees nothing but the interminable blue, spread all around. But soon, as he continues gazing, a tiny speck is visible that floats motionless along; and from time to time, from out the very heavens, there descends the soft note of the Plover's voice. Descrying some suitable ground, the bird begins to lower, and on fixed pinions, often at an acute angle, it sails downwards, and alights, sometimes on the ground, or occasionally on a fence or stake. It stands erect and motionless, with its wings raised high above the back, exhibiting the beautiful markings to the greatest advantage, and then slowly folds them into their proper place. If on the ground, it then moves forward slowly and deliberately, nodding at every step as if in emphatic approval of its surroundings and its sagacity in selecting so suitable a spot, and pays its attention to such insects as may catch its eye, uttering at times a peculiarly mournful sound, quite different from its usual flute-like cry, to be answered possibly from out the heavens above by some comrade not yet distinguishable to the naked eye. The flight of the Upland Plover is well sustained and swift, and often performed (as will be imagined from the above) at a great height; indeed, so lofty at times that its voice alone indicates its presence, the bird being fairly out of sight. It will alight indiscriminately on the ground, fence, telegraph-pole, or, as has been noticed, even on a barn. When mated the pair keep close company, seeking food together, and are rarely separated by any distance."

Nest.—"The nest is placed on the plain or prairie in some open spot, frequently near some water. It is not much of a structure, just a little grass in a depression of the ground; but almost impossible to find at any time, even when the bird is on the eggs, so admirably does her plumage harmonise with that of her surroundings."

Eggs.—Four in number, clay-colour, spotted all over with dark brown, and purplish-grey.

THE RUFFS. GENUS PAVONCELLA.

Pavoncella, Leach, Syst. Cat. Mamm. and Birds, Brit. Mus. p. 29 (1816).

Type, *P. pugnax* (L.).

The extraordinary difference in the plumage of the sexes of the Ruff constitutes, perhaps, the most remarkable characteristic of the genus *Pavoncella*, which contains but a single species. It may almost be said with truth that scarcely two males are alike in plumage. The breast-shield and ruff, which the bird dons at the period of the nesting-season, is one of the most striking nuptial garments of any bird in the world.

I. THE RUFF. PAVONCELLA PUGNAX.

Tringa pugnax, Linn. Syst. Nat. i. p. 247 (1766).

Machetes pugnax, Macgill. Brit. B. iv. p. 171 (1852); Dresser, B. Eur. viii. p. 87, pls. 557, 558 (1878); B. O. U. List Brit. B. p. 171 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 426 (1883); id. Man. Brit. B. p. 585 (1889).
Totanus pugnax, Seebohm, Hist. Brit. B. iii. p. 113 (1885).
Pavoncella pugnax, Sharpe, Cat. B. Brit. Mus. xxiv. p. 500 (1896).

(*Plate LXXXVIII.*)

Adult Male (Ruff).—As every male bird varies in this species, it is impossible to give any exact description of this sex. In the "Catalogue of Birds," however, I have endeavoured to classify the different styles of plumage which the males assume.

The main divisions into which the males may be separated are two, viz., those with the ruff *uniform* and those with the ruff *barred*. In the former section the ruff is white or black, orange-buff or chestnut. The occipital plumes vary from white to black, blue-black, purplish-black, greenish-black, rufous, chestnut, or sandy-buff.

In those males which belong to the section wherein the ruff is *barred*, there are many types. The ruff is glossy greenish-black, barred with rufous; or rufous, barred with blue-black; or sandy-buff, broadly barred with purplish-black; or buffy-white, with purplish-black bars or spots; or white, narrowly barred or vermiculated with black; or black, barred with white; or purplish-black, streaked with white.

In the *barred* forms, the occipital tufts also vary. They may be greenish-black; rufous; rufous barred with purplish-black; greenish-black, barred with sandy-buff and purplish-black; buffy-white, barred with black; white, spotted or barred with black; pale cinnamon; pure white; black, narrowly barred with white; or black, vermiculated with brown.

Between these well-marked variations numbers of intermediate forms may be found, but the above appear to me to be the main types of plumage indulged in by the Ruff. In addition to the frill and ornamental ruff, the males also lose the feathers of the face, which becomes covered with tubercles of various tints, corresponding, according to Mr. Abel Chapman, to the colour of the ruff itself.

Adult Male in Winter Plumage.—Devoid of all ornamental plumes, and looking like an ordinary Tattler or Sandpiper. Ashy-brown above, the feathers fringed with whitish, the centres of which are dusky-brown; lesser and median wing-coverts like the back; the greater coverts blackish with a slight greenish-gloss, and broadly tipped with white; bastard-wing and primary-coverts blackish; quills brown, with white shafts, the outer webs and tips of the feathers blackish, the secondaries white at the base of the inner webs, and fringed with white at their ends; the innermost secondaries browner, like the scapulars; lower back, rump, and upper tail-coverts a little darker brown than the rest of the back, with darker brown centres to the feathers; tail-feathers dark brown, the tips and the shafts white; crown of head and neck light brown, with dark centres to the feathers; lores and cheeks ashy-white; ear-coverts and neck light brown with dusky streaks; under surface of body white, the lower throat and chest mottled, with ashy bases to the feathers, and the sides of the body marked in a similar manner; axillaries and under wing-coverts white, the lower primary-coverts and quill-lining ashy-grey; bill dark brown, paler at the gape; feet yellowish-brown; iris dark brown. Total length, 12 inches; culmen, 1·3; wing, 7·4; tail, 2·6; tarsus, 1·8.

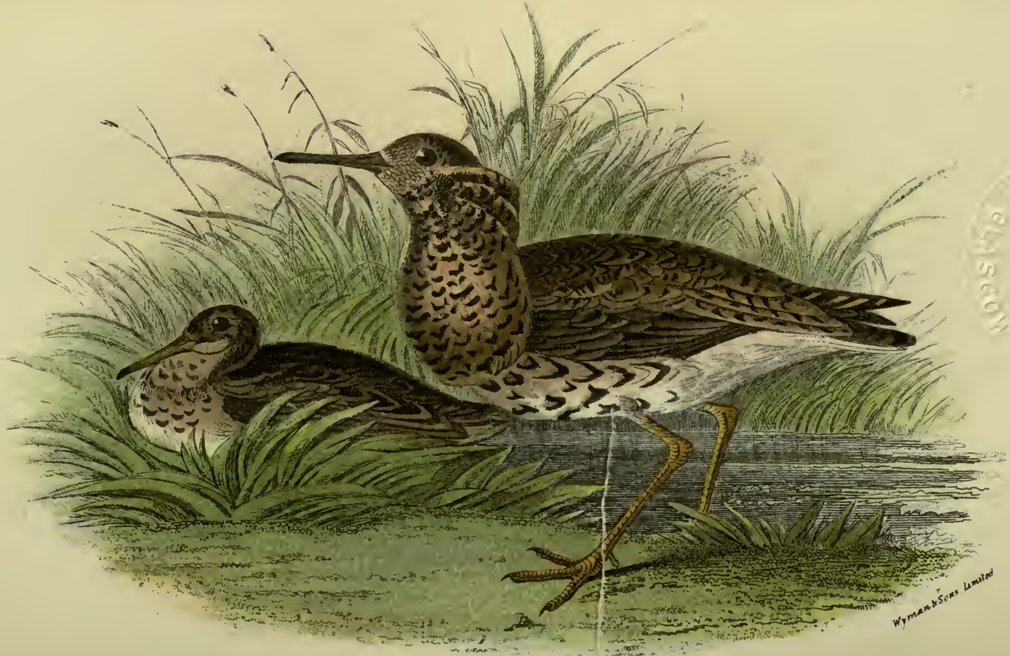
Adult Female in Winter Plumage.—Similar to the male, but much smaller. Total length, 10·5 inches; culmen, 1·2; wing, 6·1; tail, 2·15; tarsus, 1·55.

Adult Female in Summer Plumage.—Much darker than in winter, the feathers of the upper surface being blackish with a purplish gloss, but no ornamental feathers present, as in the male. Otherwise the summer plumage of the female, as regards the colour of the body, shows a strong similarity to that of the male.

Young Birds.—Resemble the winter plumage of the male, but are much more tawny-rufous, and have sandy-buff or whitish margins to the feathers of the upper surface; hind-neck more ashy than the back; sides of face, lower throat, and fore-neck pale cinnamon-buff, the chin whiter; chest and sides of body ashy-grey, marked with cinnamon-buff, the rest of the underparts white. Total wing, 7·0–7·3 inches.

PLATE LXXXVIII.

BAILLIE'S INSTITUTION GLASGOW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RUFF.

Adult Female in Winter Plumage.—Similar to the male, but distinguished by its smaller size. Wing only 5·9–6·2 inches.

Characters.—Reeves and Ruffs in winter or in immature plumage are often sent to me at the Museum for identification, and it may be as well, therefore, to state that in winter plumage the length of wing, combined with the comparatively short bill and the colour of the feet and toes, will generally distinguish the species. Mr. Seebohm also adds the following characters: *the white axillaries, and the absence of white on the primaries, secondaries, and central upper tail-coverts.*

Range in Great Britain.—This handsome wader is now chiefly a migrant, but in the fens and marshes of our Eastern counties it used to breed, and might do so still in limited numbers if protection were afforded to the few birds which still struggle to nest occasionally in Lincolnshire and Norfolk. In the present day, however, but few Ruffs come to England in the spring, though the species is more plentiful in the autumn migration; and it sometimes occurs even in winter. It mostly visits our eastern and southern coasts, and is sometimes found on inland waters; but on the western side of England and Scotland, and in Ireland, it is much more rare.

Range outside the British Islands.—The Ruff breeds in Northern Europe and Siberia, and is also found nesting in Holland, Belgium, the north of France, as well as in Poland and parts of Germany. It migrates south to the Mediterranean and occurs on both sides of the African continent as far as Cape Colony. In the East its winter range extends to India, China, the Burmese Provinces, and as far as Borneo. Occasional instances of the occurrence of the species in the Færoes and in Iceland have been recorded, and it sometimes visits North America, and has twice been met with in Barbados and once in Guiana.

Habits.—In autumn single examples are generally obtained on migration, and these are nearly always young birds of the year. At least that has been my experience, but the species is also known to collect in flocks, often of considerable size. In May the male begins to moult and to put on his elaborate breeding-dress, and nothing can be more amusing than to see one of these birds trying to attract the attention of a Reeve, who all the time appears to be utterly indifferent to the fact that his pirouetting and dancing is done for her edification. In the Zoological Gardens at Rotterdam I have seen a dozen males engaged in showing off, and the antics they play are very amusing. After springing up into the air and turning round several times, they always end by standing stock still, with the bill pointed to the ground, so as to show their neck-shield and hood to the greatest advantage, and in this position they remain for two or three minutes at a time. Occasionally two males will engage in a fight, dancing opposite to each other, but the combats are bloodless and very few feathers fly. The habit of the Ruff in selecting some bare knoll of ground on which to conduct his display has gained for it the ordinary term of "hill"-ing. Mr. A. C. Chapman has given a good account of the habits of the birds as observed by himself and his brother Mr. Abel Chapman in West Jutland. He observes:—"The Ruffs, according to their well-known habit, had selected certain 'hills' on which to conduct their amorous conflicts, and it was with the greatest interest that we watched these singular birds, in congregations of from six to eight to twenty or thirty individuals, beating their flanks and otherwise performing the strangest antics. Often a pair of Ruffs would, with ruff and ear-tufts erect, stand facing each other for minutes together, their heads lowered, and their bills nearly touching each other. Then one would spring into the air and make a desperate rush at his retiring adversary, their aptitude for running over the ground at a marvellous speed being most extraordinary. Very frequently no Reeve was present during these exhibitions, and the persistency with which the birds refuse to be driven away from their selected 'hills' merits attention. Some of these actions of the Ruffs, when at play, reminded me of the gambols of an old Black-Cock on a Northumbrian hill-side in the month of April."

The food of the Ruff consists, like that of other wading birds, of insects and worms, but they will also eat vegetable substances and rice, as well as the seeds of aquatic plants.

Nest.—Mr. Chapman says:—"The Reeves seem to breed quite separately from each other, and invariably choose a tuft of long rough grass for the nest, which is deep and always well concealed. In one instance a Red-shank and a Reeve had laid together in the same nest." The duties of incubation and the rearing of the young are left entirely to the female bird, the male busying himself but little with the bringing up of his family.

Eggs.—Four in number. The ground-colour is generally olive, but lighter eggs are found in which the ground is clay-brown or stone-colour. The markings vary much both in size and intensity, some eggs having the spots elongated and more like linear streaks, so that the surface of the egg appears to be marbled. The majority, on the other hand, are rather boldly spotted and blotched with rufous-brown, almost blackish, while some of the larger spots are light brown, almost olive. Although in some the large spots are distributed over the whole egg, in the majority of specimens they congregate near the larger end. The underlying markings are faint purplish-grey, and are never very distinct. Axis, 1·6–1·8 inch.; diam., 1·1–1·3.

THE WOOD-TATTLERS. GENUS RHYACOPHILUS.

Rhyacophilus, Kaup, Natürl. Syst. p. 140 (1829).

Type, *R. glareola* (L.).

The genus *Rhyacophilus* belongs to the long-tailed group of Tattlers, in which the bill is short and the length of the tail exceeds that of the culmen. The tarsus is long and exceeds the culmen in length. The tail is nearly square, and the centre feathers are scarcely produced beyond the others. The plumes on the chin reach to about the level of the frontal line.

Only one species of Wood-Tattler is known, confined to the Old World, where it is very widely distributed.

I. THE WOOD-TATTLER. RHYACOPHILUS GLAREOLA.

Tringa glareola, Linn. Syst. Nat. i. p. 250 (1766).
Totanus glareola, Macgill. Brit. B. iv. p. 346 (1852); Dresser, B. Eur. viii. p. 143, pl. 565 (1877); B. O. U. List Brit. B. p. 175 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 463 (1884); Seebohm, Hist. Brit. B. iii. p. 133 (1885); Saunders, Man. Brit. B. p. 593 (1889).

Rhyacophilus glareola, Sharpe, Cat. B. Brit. Mus. xxiv. p. 491 (1896).

Adult Male in Winter Plumage.—General colour above bronzy-brown, with light ashy-bronze margins to the feathers, which are slightly spotted with white on both edges; scapulars like the back, but with somewhat larger white spots; lower back and rump uniform brown, the feathers of the latter part edged with white; upper tail-coverts pure white, the lateral ones with blackish shaft-streaks and irregular longitudinal markings; lesser wing-coverts uniform brown; the median and greater coverts spotted with white on both webs, and resembling the scapulars; bastard-wing, primary-coverts and quills blackish-brown, fringed with white at the ends, the secondaries notched with white on both webs, with a barred appearance of blackish intermediary bands; centre tail-feathers ashy-brown, barred with blackish-brown, and deeply notched with white; the lateral feathers white, barred with blackish, these bars becoming irregular on the lateral feathers, and reduced to a few freckles on the outermost ones; crown of head and hind-neck almost uniform ashy-brown, slightly mottled with darker brown centres to the feathers; lores dusky, surmounted by a distinct white eyebrow; sides of face white, slightly streaked with dark brown; the ear-coverts uniform dark brown along their upper edge; cheeks and throat white; sides of neck, lower throat, fore-neck, and chest, ashy, varied with shaft-lines of brown; remainder of under surface of body pure white; sides of upper-breast ashy-brown; lateral under tail-coverts with blackish shaft-streaks, and a few frecklings of black; under wing-coverts white, mottled with blackish bases to the feathers; axillaries white, with a few irregular bars and freckles; lower primary-coverts and quills below dusky-brown, with whitish spots on the edges of the inner secondaries; basal half of bill olive-brown, terminal half black; legs and feet pale greenish; claws dark horn-colour; iris brown. Total length, 8·5 inches; culmen, 1·15; wing, 4·6; tail, 1·85; tarsus, 1·4.

Adult Female.—Similar to the male; bill blackish, olive at base of lower mandible; feet olive; iris very dark brown. Total length, 8 inches; wing, 4·9.

Adult Male in Summer Plumage.—More variegated than in winter, the back being uniform dark brown, with large notches of white on both webs, and having very distinct white edges to the scapulars and inner wing-coverts; the long upper tail-coverts barred with dusky blackish, and resembling the centre tail-feathers; the head and neck streaked with white, the sides of the face, lower throat, and fore-neck very distinctly and broadly streaked with blackish centres to the feathers; the sides of the body and under tail-coverts mottled with cross-bars of blackish-brown; the axillaries also narrowly barred with blackish-brown; bill blackish-olive below, at base lighter brownish-olive; feet light greyish-olive; iris dark brown. Total length, 7 inches; culmen, 1·3; wing, 4·9; tail, 1·85; tarsus, 1·4.

Young after First Moult.—Differs from the adults in being closely spotted on the upper surface, but the spots are more or less rufescent; the lower throat and chest are ashy as in the winter plumage of the adults, but the dusky-brown stripes are very distinct, and are also visible on the sides of the body; the axillaries are pure white, or with the merest trace of frecklings of brown; bill dusky-brown, inclining to greenish-olive towards the base; feet greenish-olive; iris blackish-brown.

Range in Great Britain.—The Wood-Tattler visits our shores on migration, occurring on our eastern and southern coasts every autumn with tolerable regularity, and also visiting inland waters. On the west coast it is decidedly rare, and only one instance of its capture has been recorded from Ireland. During the spring migration the species also appears, but is very rare. That it formerly bred within our limits is certain, and the late Mr. John Hancock obtained a nest and eggs in June, 1853, on Prestwick Car in Northumberland, a locality now drained. "The late Mr. F. Bond received eggs which he considered to be well authenticated from the vicinity of Elgin" (Cf. Saunders' "Manual," p. 593).

Range outside the British Islands.—The breeding area of the present species extends throughout Northern and Temperate Europe and Asia as far as Kamtchatka, while its winter range carries it to South Africa, India, and the Malayan Archipelago, passing through all the intervening countries in its flight.

Habits.—The Wood-Tattler is a somewhat late arrival in Europe from its winter haunts, and I saw the species still in flocks in the Hanság Marshes in Hungary towards the end of May. They arrive still later in their northern haunts, and are not seen in their Arctic breeding-grounds till early in June. Mr. Seebohm writes:—"I first made the acquaintance of this most interesting bird on the fjelds of Lapland, near the Varanger Fjord in 1874; but in the following year I had much better opportunities of watching its habits in the valley of the Petchora. On their first arrival, the birds were absurdly tame, allowing us to approach within a few yards of them as they frequented the pools formed by the rapidly-melting snow in the streets of the town of Ust Zylma. A week later we found them at Haberiki, thirty miles further north. They were feeding on the edges of the marshes and the little forest-tarns; and after we had shot one from the summit of a dead larch-tree, between sixty and seventy feet from the ground, we became more reconciled to the name of *Wood*-Sandpiper. They were excessively tame, and were in full song. The note which the male utters during the pairing-season is much more of a song than that of the Grasshopper-Warbler, which it somehow resembles; it is a monotonous *til-il-il*, begun somewhat low and slow, as the bird is descending in the air, with fluttering upraised wings, becoming louder and more rapid, and reaching its climax as the bird alights on the ground, or on a rail, or sometimes on the bare branch of a willow, the points of its trembling wings almost meeting over its head, when its feet find support. This song is a by no means unmusical trill, and has an almost metallic ring about it. The alarm-note of the Wood-Sandpiper is somewhat like the *tyii-tyii* of the Red-shank, but much softer." The food of the species consists of worms, insects and their larvæ, and small molluscs.

Nest.—According to Mr. Seebohm, the nest of the Wood-Tattler is exceedingly difficult to find; it is generally discovered by accident, in consequence of the female, who is a somewhat close sitter, flying off, and thus revealing the place where her eggs are concealed. This is generally in open country, not absolutely on swampy ground, but not very far from it; a patch of dry ground, overgrown with heath, sedges, and coarse grasses, is generally selected, frequently not far from a few stunted willow-bushes, on which the bird frequently alights.

The nest itself is a mere hollow in the ground, lined with a few dry stalks and blades of grass. Mr. Robert Read writes to me:—"This species is exceedingly wary, and although very demonstrative when an intruder is in the vicinity of its nest, it is very careful not to betray the whereabouts of the latter. In June, 1894, on the edge of a reed-covered lake or swamp, I watched a pair unsuccessfully for more than an hour. They flew around, uttering the most noisy cries of alarm, and kept on settling on the tops of the young Scotch fir-trees which grew here and there amongst the willow-scrub, perching within a dozen yards of me. It was very curious to observe these birds, apparently so ill-adapted for perching, clinging sometimes to the side of, and sometimes to the extreme tip of the topmost shoot or 'leader' of the tree. So bold were they that I was able to photograph them as they sat on the summits of the trees."

Eggs.—Four in number, and very handsome. The ground-colour varies from olive-grey or olive-brown to light clay-colour or stone-grey, and the markings are reddish or chestnut, or even blackish, when they form blotches. Although the larger spots are congregated near the thicker end of the egg, in some cases they are distributed fairly evenly over the whole egg, and the purplish-grey underlying markings are decidedly distinct. In other examples, however, only the larger end of the egg shows blotches and spots, and the greater part of it has only scanty spots distributed over its otherwise uniform surface. Axis, 1·4–1·55 inch.; diam., 1·0–1·05.

THE GREEN-SHANK. GENUS GLOTTIS

Glottis, Koch, Syst. Baier. Zool. p. 305 (1816).

Type, *G. nebularius* (Gunn.).

Our Green-shank is the only representative of this Old-World genus, and is distinguished from the other British members of the Sub-family by having an upturned bill, in which respect it resembles the Terek Tattler (*Terekia cinerea*) and Haughton's Tattler (*Pseudoglottis guttifer*). The outer toe is united to the middle one by a basal membrane, but there is scarcely any indication of a web between the latter and the base of the inner toe.

Only one species of the genus *Glottis* is known.

I. THE GREEN-SHANK. GLOTTIS NEBULARIUS.

Scolopax nebularius, Gunner. Leem. Lapp. Beschr. p. 251 (1767).

Glottis chloropus, Macgill. Brit. B. iv. p. 319 (1852).

Totanus canescens, Dresser, B. Eur. viii. p. 173, pl. 570 (1871); B. O. U. List Brit. B. p. 177 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 483 (1884); id. Man. Brit. B. p. 605 (1889).

Totanus glottis, Seebohm, Hist. Brit. B. iii. p. 149, pl. 29 (1885).

Glottis nebularius, Sharpe, Cat. B. Brit. Mus. xxiv. p. 481 (1896).

Adult Male in Winter Plumage.—General colour above ashy-brown, mottled with whitish edges to the feathers, which are freckled and sub-terminally lined with darker brown, the shafts being also well marked; scapulars clearer ashy-grey, with an interrupted sub-terminal line of blackish-brown; lower back, rump, and upper tail-coverts, pure white; exterior wing-coverts uniform blackish-brown; median and greater coverts lighter brown, fringed with white; bastard-wing, primary-coverts, and quills blackish, the latter fringed with white at the end of the inner web; the secondaries ashy-brown, edged with white, the long innermost secondaries spotted with black on the margins; tail-feathers white, the centre ones crossed with regular but somewhat interrupted bars of brown, the other feathers with a few broken spots and bars of brown on the outer web; crown of head and hind-neck greyish-brown, the feathers edged with white, imparting a streaked appearance, more marked on the head; forehead, lores, and sides of face pure white; the sides of the neck narrowly streaked with ashy-brown, as well as the upper margins of the ear-coverts; entire under surface of body pure white; sides of upper breast irregularly freckled with brown; under wing-coverts white, with a sub-terminal bar of brown, or a central arrow-head line of the latter colour; axillaries white, with a few remains of brown spots; lower primary-coverts ashy, with whitish edgings; quills below ashy, the lateral markings of the secondaries indicated below; bill and feet light slate-colour; iris dark brown. Total length, 13 inches; culmen, 2·2; wing, 7·2; tail, 2·85; tarsus, 2·15.

Adult Male in Breeding Plumage.—Of a more ruddy-brown than in the winter plumage, and with black centres to the feathers of the upper surface; the head and neck also streaked with black; sides of face white, narrowly streaked with black; under surface of body white, the lower throat, fore-neck, and chest with numerous ovate spots of black; the flanks with a few irregular bars of black; under wing-coverts and axillaries white, barred with black, the bars on the latter somewhat interrupted; lower back, rump, and upper tail-coverts white, the lateral coverts barred with black; two central tail-feathers ashy-grey, slightly freckled with dusky, and notched with black on the margins; remainder of tail-feathers white, barred with blackish, the bars becoming more irregular on the lateral feathers, which have distinct bars only on the outer webs; bill blackish-brown lighter brownish-grey towards the base, especially on the lower mandible; feet yellowish-grey, the joints bluish. Total length, 12 inches; culmen, 2·1; wing, 7·5; tail, 3; tarsus, 2·2.

Adult Female.—Similar to the male in colour; bill blackish-brown, the basal half lighter, on the upper mandible with a bluish tinge, on the lower one, with a reddish-grey one; feet dirty olive-grey, the joints darker and more bluish-grey.

Young after First Moult.—Similar to the winter plumage of the adults, but much more tinged with rufous-brown; the feathers spotted with whity-brown on both webs; centre tail-feathers white, distinctly barred across with black, the chest also distinctly streaked with dusky; the sides of the breast spotted and mottled with dusky-brown.

Range in Great Britain.—The Green-shank breeds in the north of Scotland and in the Hebrides, also in the Isle of Skye and some of the other islands off the west of Scotland. In England it is a migrant only, occurring sparingly in its northward journey, but more frequently during the autumn migration, seldom remaining through the winter. In Ireland, it appears to stay throughout the cold season.

Range outside the British Islands.—The breeding-area of the Green-shank extends from Great Britain to Scandinavia, Northern Europe generally, and Northern Asia to the Stanovoi Mountains in Eastern Siberia. In winter this species visits South Africa, India, and China, and even reaches Australia, passing through the intervening countries on its passage.

Habits.—I have always found the Green-shank a very shy bird, and extremely difficult to whistle within range. The few specimens which I was able to procure in the tidal harbours of the south coast have always been birds of the year, and I have never seen the species in flocks, but always singly. Nor have I seen it consorting with Red-shanks or other shore-birds. It nests on hilly ground, and in the breeding-season is as wary as it is during its migration to and fro in England. Its food consists of the usual fare common to waders, but from its large size it is able to capture prey unattempted by its smaller relations. Thus tadpoles and frogs have been discovered to form part of its diet, and even small minnows have been found in its stomach.

Nest.—Sometimes built in a tuft of grass, or concealed amongst the heath and short herbage; it is, according to Mr. Seebohm, very slight, being a mere depression in the ground, lined with a few bits of dry grass or withered leaves.

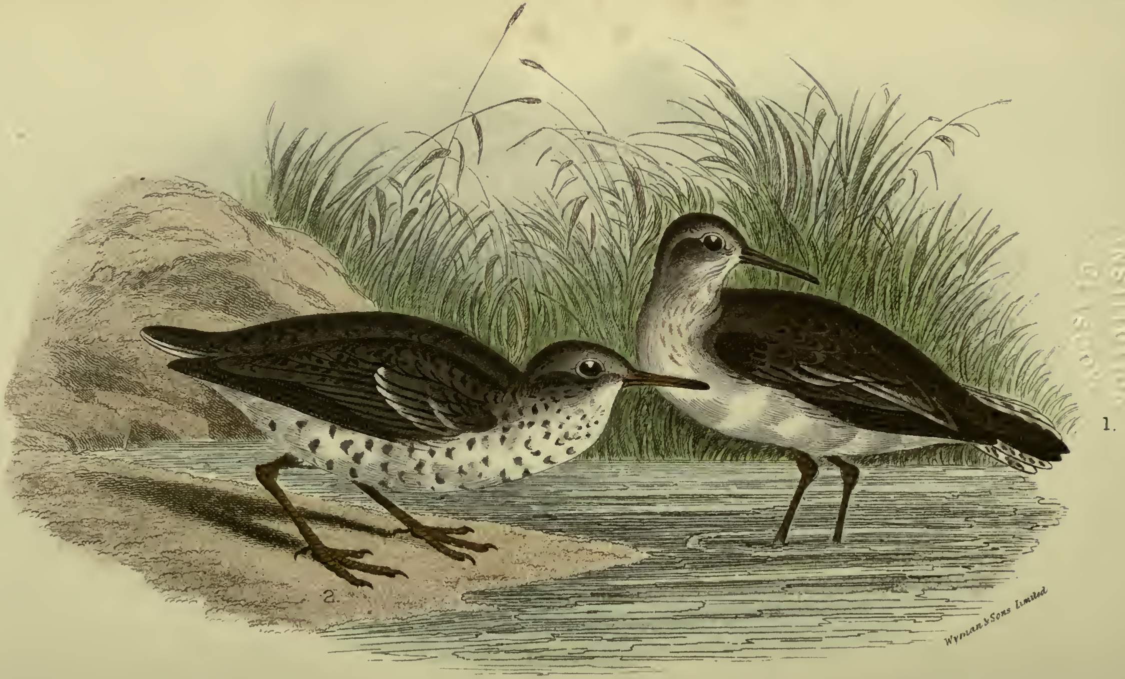
Eggs.—Four in number, and like large Wood-Tattlers' in appearance. The ground-colour varies from creamy-buff to deep clay-brown. The spots and blotches are deep chestnut, often blackish, and, as a rule, congregated round the larger end of the egg. When distributed over the surface of the latter they are smaller, and are accompanied by numerous little dots and freckles, and the underlying grey spots and blotches are almost as much in evidence as the dark overlying ones. Axis, 1·8–2·1 inches; diam., 1·25–1·35.

THE SUMMER-SNIPES. GENUS TRINGOIDES.

Tringoides, Bp. Saggio distr. Met. An. Vert. p. 58 (1831).

Type, *T. hypoleucus* (Linn.).

The Summer-Snipes, of which our "Common Sandpiper," as it is usually called, is the type, belong to the short-billed section of the Tattlers. The bill is not so long as the tail,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1. COMMON SANDPIPER.

2. SPOTTED SANDPIPER.

though the culmen exceeds the length of the middle toe and claw. It is nearly straight, with only a slight curve at the end, but the tarsus is comparatively short and is not longer than the middle toe and claw. Thus the Summer-Snipes never stand so high on their legs as Red-shanks or Green Sandpipers, and are expert swimmers, like the Phalaropes.

Two species of *Tringoides* are known, our British *T. hypoleucus* and the American *T. macularius*, which also visits us occasionally.

I. THE SUMMER-SNIPE, OR COMMON SANDPIPER.
TRINGOIDES HYPOLEUCUS.

Tringa hypoleucus, Linn. Syst. Nat. i. p. 250 (1766).
Actitis hypoleucus, Macgill. Brit. B. iv p. 351 (1852).
Totanus hypoleucus, Dresser, B. Eur. viii. p. 127, pl. 563 (1877); Saunders, ed. Yarrell's Brit. B. iii. p. 446 (1883); Seebohm, Hist. Brit. B. iii. p. 117, pl. 30, figs 7–9 (1885); Saunders, Man. Brit. B. p. 591 (1889).
Tringoides hypoleucus, B. O. U. List Brit. B. p. 173 (1883); Sharpe, Cat. B. Brit. Mus. xxiv. p. 456 (1896).

(*Plate LXXXIX. Fig.* 1.)

Adult Male in Breeding Plumage.—General colour above bronzy-brown, the feathers with arrow-shaped central markings of black, which take the form of bars on the scapulars and inner secondaries, which are like the back; wing-coverts bronzy-brown like the back, but regularly barred across with blackish, the median and greater coverts with ashy fringes, the latter rather broadly tipped with white; bastard-wing, primary-coverts, and quills brown with an olive gloss, the secondaries tipped with white and having a broad white base; lower back, rump, and upper tail-coverts like the back, the lateral coverts barred with blackish and with white on the outer web; tail-feathers bronzy-brown, with irregular cross-bars of blackish-brown, the middle feathers narrowly, but the outer feathers broadly, tipped with white, the penultimate feather barred with white on the outer web, the outermost feather almost entirely white, with a little brown on the inner web, which is barred with blackish; crown of head and neck bronzy-brown, with narrow mesial shaft-lines of blackish-brown; a narrow superciliary line of whitish, extending from the base of the bill; sides of face bronzy-brown, with blackish shaft-lines to the feathers; forepart of cheeks and under surface of body pure white, with dusky streaks on the throat, these being a little larger on the chest, the sides of the latter and sides of upper-breast brown; under wing-coverts white, mottled with blackish bases to the feathers, especially distinct on the edge of the wing; axillaries pure white; quills dusky below, white towards the base of the inner web; bill dusky above, grey beneath; feet greyish, tinged with green, claws black; iris brown. Total length, 8 inches; culmen, 1·1; wing, 4·1; tail, 2; tarsus, 0·96.

Adult Female in Breeding Plumage.—Similar to the male in colour, but not quite so heavily marked, and the streaks on the fore-neck and chest less pronounced. Total length, 7 inches; culmen, 1·1; wing, 4·3; tail, 2·4; tarsus, 0·85.

Adults in Winter Plumage.—A little more bronzy-olive than in the summer, and uniform above, without the black central streaks and black spear-shaped spots, which are characteristic of the summer dress; the streaks on the throat are also much narrower and not so distinct.

Young Birds.—Easily distinguished by the cross-bars of sandy or reddish-buff and dusky-brown, which give the upper surface a freckled appearance; the throat uniform, with scarcely any indication of streaks on the lower part.

Range in Great Britain—The Summer-Snipe visits us in spring, and remains to breed; and in the autumn migration it is one of the commonest of our wading birds, occurring both on the inland rivers and lakes, and also in the tidal harbours. It breeds in the north of England and Scotland, as well as in Wales and the south-western counties of England. Mr. Ussher states that it breeds in every county of Ireland, except perhaps, Kilkenny. It only breeds locally in Wexford and the north of Waterford, and is very common on the lakes throughout Ireland.

Range outside the British Islands.—The Summer-Snipe breeds throughout temperate Europe and Asia, and passes in winter to Africa, the Indian Peninsula, and even as far as Australia.

Habits.—That the Summer-Snipe passes across England, both in its northward and southward migration, is proved by the variety of places in which the species is encountered. In May I have found it in pairs, in full breeding plumage, on the sides of the lake in Avington Park in Hampshire; and the specimens which my friend, the late Sir Edward Shelley, allowed me to procure for the British Museum, are preserved in the national collection. On its arrival in spring the species is not shy, and I found several pairs at Avington, where they frequented the shores of the lake for several days before passing northward. The habits of the old birds in spring are exactly similar to those of the species in autumn, excepting that, at the latter time of year, it is possible to see family parties of five or six together. A certain number of non-breeding birds remain in the south, for I have met with solitary individuals on the shores of the Thames in June. Towards the end of July and early in August the migrants arrive from the north, and small flocks of half-a-dozen or more frequent the edges of the river, or retreat on to the adjacent grass-lands, where they run about among the cows, catching insects and bobbing their tails after the manner of Wagtails. In fact, when feeding or running on the mud, the tail of the Summer-Snipe is always in motion. Excepting in the case when family parties keep together, and are somewhat easily approached, the Summer-Snipe is decidedly a shy bird, and the isolated individuals which are met with are not only difficult to get within gun-shot, but are always wary in the extreme. And this is true, not only of those one may encounter on the river-side, but also of the stray birds that one meets with on the muddy creeks of a tidal harbour. Another aid to escape is exhibited by the excellent diving powers of this little bird. I well remember how, in Romney Hoy, I shot at a Summer-Snipe, and only wounded it; so the bird commenced to swim, and paddled away at a great rate. Not liking to shoot a bird and not preserve it, I waded into the water, fancying that I knew every step on the green saltings then covered by the sea; but the bird swam as fast as I could walk, and I was soon knee-deep and more in the water. Holding my gun well up, and lifting my coat to keep my upper garments dry, I waded on to try and head the bird, when in a second I stepped into a deep hole, and went head-over-heels beneath the water. After that I became reckless, and determined to catch my bird, as my cartridges were soaked, and my day's collecting over; but I often look at the skin of my little friend in the cabinet in the British Museum, and remember how well he swam, and how bravely he dived, ere I was able, after being half drowned, to capture him at last.

The note of the Summer-Snipe is a somewhat shrill *wheet*, and is generally uttered as it rises, and develops into a piping cry of several syllables as the bird hurries along, just above the surface of the water, with rapid vibrating strokes of the wing, this motion being sometimes exchanged for a steady sail for a few yards at a time.

Mr. Seebohm writes:—"Shortly after their arrival at their breeding-grounds the males are very demonstrative and excessively noisy. In early summer they may often be seen running along the rough stone walls near the water, with drooping wings, as if displaying their charms to the females crouching amongst the herbage below. At this season the cock birds sometimes soar into the air, and utter a short trill, as is the case with most other waders. It is said sometimes to perch on bushes; and Mr. Carter informs me that he once saw one perched on the top branch of an ash tree thirty feet from the ground. The food of the Common Sandpiper is composed largely of worms and insects, with their larvæ. It may sometimes be seen searching for beetles amongst the droppings near water where cattle drink, and it also catches many insects as they flit past, as well as takes them from the water or the stems of plants. It is very possible that it also eats mountain-fruits, such as bilberries, and small bits of gravel are found in its gizzard."

Nest and Eggs.—Mr. Robert Read writes to me:—"A sloping bank near the shore of an inland loch or river is the favourite breeding-place of the Common Sandpiper. Alongside Loch Tay I found six nests one afternoon. I have known eggs to be taken near Glasgow as early as May 6th. The weight of normal eggs of the Common Sandpiper is about 178 grains, but in 1891 I took a miniature set (still in my collection), complete as to shell and markings, containing a yolk, and perfect in every respect, averaging only 90 grains; whilst in Sweden, in 1894, I took a large light-coloured set, averaging 202 grains per egg."

Eggs.—Generally four in number, varying in colour from pale clay-colour to greenish-white, with chocolate-brown spots and blotches, as a rule equally distributed, but sometimes more thickly round the larger end, the underlying spots purplish-grey. Axis, 1·3–1·6; diam., 0·95–1·05.

II. THE AMERICAN SUMMER-SNIPE, OR SPOTTED SANDPIPER.

TRINGOIDES MACULARIUS.

(*Plate LXXXIX., Fig* 2.)

Tringa macularia, Linn. Syst. Nat. i. p. 249 (1766).
Actitis macularia, Macgill. Brit. B. iv. p. 356 (1852).
Totanus macularius, Saunders, ed. Yarrell's Brit. B. iii. p. 452 (1883); Seebohm, Hist. Brit. B. iii. p. 122, pl. 30 (1885); Saunders, Man. Brit. B. p. 592 (1889).
Tringoides macularius, B. O. U. List Brit. B. p. 174 (1883); Sharpe, Cat. B. Brit. Mus. xxiv. p. 468 (1896).

Adult Male in Breeding Plumage.—Similar to *T. hypoleucus*, but much more strongly barred with black on the upper surface, and thickly spotted with black underneath; the size is also smaller, and, in the skin, the bill is almost entirely fleshy-yellow; the inner secondaries likewise show less white than in the allied species; bill greenish-olive above, yellow beneath, the point of both mandibles black; feet pale yellowish flesh-colour, claws black; iris hazel. Total length, 6·5 inches; culmen, 1; wing, 4; tail, 1·85; tarsus, 0·85.

Adult Female in Breeding Plumage.—Similar to the male, and quite as heavily spotted below. Total length, 6·5 inches; wing, 4·1.

Young.—Differs from the adult in being more olive-brown, and entirely wanting the black spots of the under-surface; the upper surface barred across with reddish-brown and black.

Adult in Winter Plumage.—More olive-brown than in summer, and lacking the bronzy shade; the under surface of the body white, with few or no shaft-lines of brown on the fore-neck and chest, and having the sides of the upper-breast ashy-brown.

Characters.—The spotted breast of the adult readily distinguishes this species from *T. hypoleucus*, but specimens in winter plumage or in immature dress are difficult to distinguish from the same phases of our Common Summer-Snipe. The American species, however, may be distinguished by the greater amount of yellow on the under mandible, and by the broad subterminal band which is continuous throughout the secondary quills. In *T. hypoleucus* the inner secondaries are, for the most part, white.

Range in Great Britain.—This species has a very doubtful right to be included in the British List, and Mr. Howard Saunders considers that, of all the recorded instances, only two are possibly genuine. I have retained it simply because, like so many other American waders which visit us, it is a bird which may occur accidentally.

Range outside the British Islands.—The American Summer Snipe breeds throughout North America, generally not beyond the Arctic Circle, and visits, in winter, Central America, the West Indies, and the northern part of the South American Continent.

Habits.—We quote the following note from Mr. D. G. Elliot's recent work:—"It arrives in April from the far southern lands where it has passed the winter, and soon commences the courtship preparatory to the nesting season. The 'Tilt-up,' or 'Peet-weet' as it is also called, does not go in flocks of any size, but is rather solitary in its disposition, an individual or pair seeming to appropriate a certain amount of the shore, where they dwell contentedly, only flying when disturbed higher up or lower down the river, as the case may be; and then if any 'Tilt-up' is on the particular spot near where they desire to alight, they move on to some other part of the bank or beach. The flight is rapid, performed with quick, stiff beats of the wings, and the bird utters frequently its cry of *pēēt-wēēt* as it passes along. It is a most comical species to watch upon the shore. When it alights after its short flight, it may stand for an instant motionless, contemplating its surroundings, and then it makes a profound bow, inclining both head and neck, at the same time elevating its hindquarters in a seeming derogatory manner, very disrespectful to the onlookers; and as if to emphasise the fact that the motion was intended for each and all of those present, it deliberately moves around on its feet, presenting head and tail alternately to first one point of the compass and then to another. It is usually silent during this performance, its importance and solemnity doubtless precluding any such thing as idle remarks. So long as it remains upon the shore, these depressions and elevations of alternate ends occur frequently, and sometimes the bird stops even when in chase of some elusive insect to repeat this mark of its distinguished consideration for its observer."

Nest.—"The nest, lightly built of straws and grasses, is placed in open spots, either along the borders of streams or ponds, or in fields among the stubble."

Eggs.—Four in number, the ground-colour being generally stone-colour or pale clay, and sometimes olive, with blackish-brown or reddish-chocolate over-lying spots and blotches, the small spots being equally distributed over the whole surface, while the blotches are more often clustered round the larger end, where they are sometimes confluent, the under-lying markings pale grey. Axis, 1·2–1·4; diam., 0·85–1·0.

THE GREEN-LEGGED TATTLERS. GENUS HELODROMAS.

Helodromas, Kaup, Natürl. Syst. p. 144 (1829).

Type, *H. ochropus* (Linn.).

The genus *Helodromas* contains two species, one belonging to the Old World and one to America. In structure the genus closely resembles the genus *Totanus*, with which it has usually been associated, but the tarsus is much shorter, and is scarcely longer than the middle toe and claw, whereas in *Totanus* it is much longer. *Helodromas* has a moderately long bill, not exceeding the length of the tail, the tarsus longer than the middle toe and claw, and the outer toe is connected to the middle one by a perceptible web at the base, the inner toe having scarcely any broad web and being cleft almost to the base.

I. THE GREEN-LEGGED TATTLER. HELODROMAS OCHROPUS.

Tringa ocropus, Linn. Syst. Nat. i. p. 250 (1766).

Totanus ochropus, Macgill. Brit. B. iv. p. 342 (1852); Dresser, B. Eur. viii. p. 135, pl. 564 (1875); Saunders, ed. Yarrell's

Brit. B. iii. p. 457 (1884); Seebohm, Hist. Brit. B. iii. p. 126, pl. 30, figs. 1–3 (1885); Saunders, Man. Brit. B. p. 595 (1889); Lilford, Col. Fig. Brit. B. part xxvi. (1893).
Helodromas ochropus, B. O. U. List Brit. B. p. 174 (1883); Sharpe, Cat. B. Brit. Mus. xxiv. p. 437 (1896).

Adult in Winter Plumage.—General colour above uniform olive-brown, with a slight gloss of bronzy-olive; scapulars and wing-coverts like the back, but having a few tiny white spots on the margins; lower-back and rump darker, blackish-brown with whitish edges to the feathers; upper tail-coverts pure white; lesser wing-coverts as well as the outer median and outer greater coverts uniform olive-brown; bastard-wing, primary-coverts, and quills blackish-brown; the secondaries like the back and freckled with tiny white spots on the edges; tail-feathers white, the centre ones with three black bars on the terminal half, these bars gradually disappearing on the lateral feathers, the outer ones being entirely white; crown of head, hind neck, and mantle, uniform ashy-brown; a supra-loral streak of white; lores dusky, surmounted by an indistinct white eyebrow, lined with blackish streaks; sides of face, ear-coverts, and cheeks white, rather broadly streaked with blackish-brown; throat white, streaked with brown on the sides; lower throat, sides of neck, and fore-neck also distinctly streaked with brown; remainder of under surface of body pure white; sides of upper breast brown, slightly mottled with white; under wing-coverts and axillaries blackish, barred very plainly with white; lower primary-coverts and inner lining of quills uniform, with white dots along the inner edge of the secondaries; bill dusky above, reddish beneath; feet greyish-blue, tinged with green; iris dusky. Total length, 9 inches; culmen, 1·4; wing, 5·4; tail, 2·2; tarsus, 1·3.

Adult Male in Breeding Plumage.—Differs from the winter plumage in being much more variegated, the whole of the back being spotted with white, the spots being arranged in pairs on the edges of the feathers, which are also tipped with a bar or twin spots of white; the whole of the head and neck streaked with white, and the brown streaks on the side of the face, fore-neck, and chest, broad and distinct, the sides of the upper-breast being brown, very much mottled with bars of white. Total length, 9·3 inches; culmen, 1·4; wing, 5·4; tail, 2·15; tarsus, 1·2.

Adult Female in Breeding Plumage.—Does not differ from the male in colour, but is not quite so strongly marked. Total length, 9 inches; wing, 5·6.

Young in Autumn Plumage.—Scarcely differs from the winter plumage of the adult, but, when freshly moulted, it has indistinct margins of ashy-bronze on the feathers of the upper surface; the tail-bands are narrower on the centre feathers of the upper surface, while the sub-terminal band is broader than in the adults.

Range in Great Britain.—The present species is not known to breed within our limits, but is noticed during migration, being most commonly observed in the autumn. It is rarer on our western coasts than in the eastern counties, and in Ireland occurs chiefly during the autumn migration.

Range outside the British Islands.—The Green Tattler, or Green Sandpiper, as it is usually called, breeds throughout the northern parts of the Old World, from the Atlantic to the Pacific, and is found from the Arctic Circle to most parts of Northern Europe, being known to nest from Holstein to Northern Germany, Poland, and Central Russia. In winter it visits Africa, India, and China, but in many parts of its northern range a few individuals remain during the cold season.

Habits.—This species is generally met with singly, at least on the river Thames, where I have procured a few specimens, young birds in autumn plumage. On the south coast of England I have met with it in small parties, frequenting, throughout the autumn, the muddy dykes in the vicinity of our southern harbours. It is, according to my experience, a singularly shy bird, and one which needs most careful stalking, whether by the river-side or in the mud-gullies near the sea-shore. It flies off with a note very much like that of the Summer-Snipe, but the flight is more steady, and not of such a "skimming" character as that of the last-named bird. In fact, in its ways it more resembles a Red-shank than a Summer-Snipe. "Its note," says Seebohm, "is very soft and musical, not nearly so loud as that of the Red-shank, and may be represented by the syllables *tyĕ-tyĕ-tyĕ*, which, when the bird is alarmed, becomes a loud excited *tyük-tyük-tyük*."

Nest.—The present species has the curious habit of nesting on trees, at a height from three to thirty feet above the ground. Mr. Seebohm states that, although it does not build a nest of its own, its eggs are placed in the fork of a tree-trunk, on the leaves, or lichen and moss which may have accumulated there. The eggs have been found in the old nests of the Song-Thrush, Mistle-Thrush, and Fieldfare, while those of the Ring-Dove, Jay, Red-backed Shrike, and even old Crows' nests or deserted Squirrel's dreys have been utilised by the Green Tattler. He writes:—"On the 30th of May, 1882, as I was walking in a forest about twenty miles south of Stolp in Pomerania, with my friend Dr. Holland, we passed a small swamp, where a Green Sandpiper attracted our attention by its loud cries. A few stunted larches and alder-bushes still grew in the swamp, and the bird flew from branch to branch and bush to bush in the most excited manner, having, no doubt, young for whose safety it was so anxious. Hintz says that he has known the nest to be in a hole in a fallen tree-trunk, on the stump of a felled or broken-down tree, but most commonly in old nests from three to twelve feet from the ground, though, on one occasion, he took the eggs from an old Squirrel's nest in a birch tree at a height of thirty feet." It would be interesting to know the way in which the old birds carried their young to the ground from such an elevation.

Eggs.—Four in number. The ground-colour varies from greenish-white to pale clay and stone-colour; the overlying spots are chocolate or reddish-brown, and are distributed over the entire surface, but more numerously at the larger end; the underlying spots are of a purplish-grey, and are equally distributed. Axis, 1·5–1·65; diam., 1·05–1·2.

II. THE SOLITARY TATTLER. HELODROMAS SOLITARIUS.

Tringa solitaria, Wilson, Amer. Orn. vii. p. 53, pl. 58, fig. 3 (1813).

Totanus solitarius, B. O. U. List Brit. B. p. 175 (1883); Seebohm, Hist. Brit. B. iii. p. 130 (1885); Saunders, Man. Brit. B. p. 597 (1889); Lilford, Col. Fig. Brit. B. part xxvi, (1893).

Helodromas solitarius, Sharpe, Cat. B. Brit. Mus. xxiv. p. 444 (1896).

Adult Male in Breeding Plumage.—Similar to *H. ochropus*, but smaller, and wanting the white rump of the latter species; the rump, as well as the mesial upper tail-coverts dusky-blackish; the lateral upper tail-coverts white, broadly barred with black, exactly like the tail-feathers, all of which have broad black bars; under surface of body resembling that of *H. ochropus*, but the white bars on the axillaries and under wing-coverts much wider than in that species; bill greenish-black; the edges of the eyelids dark grey; feet greenish-grey, claws brownish-black; iris brown. Total length, 7 inches; culmen, 1·2; wing, 5·1; tail, 2·1; tarsus, 1·15.

Winter Plumage.—Differs from the winter plumage of *H. ochropus* exactly in the same way as the summer plumage of the two birds differ. From the summer plumage it is distinguished by being more uniform above, with scarcely any white spots, the head uniform and not streaked with white; eyelid and a supraloral streak white; lower throat, fore-neck, and sides of neck ashy-brown, slightly mottled with darker brown spots or bars.

Young after the First Moult.—Similar to the winter plumage of the adults, but all the margins of the feathers of the back and wings are notched or spotted with light rufous-brown; under surface of body pure white, the lower throat streaked with brown, and the sides of the fore-neck and of the breast nearly uniform dark brown.

Range in Great Britain.—Three specimens of this species are recorded as having been procured in the British Islands. The first was obtained on the banks of the Clyde, the second in the Scilly Islands, and the third in Cornwall.

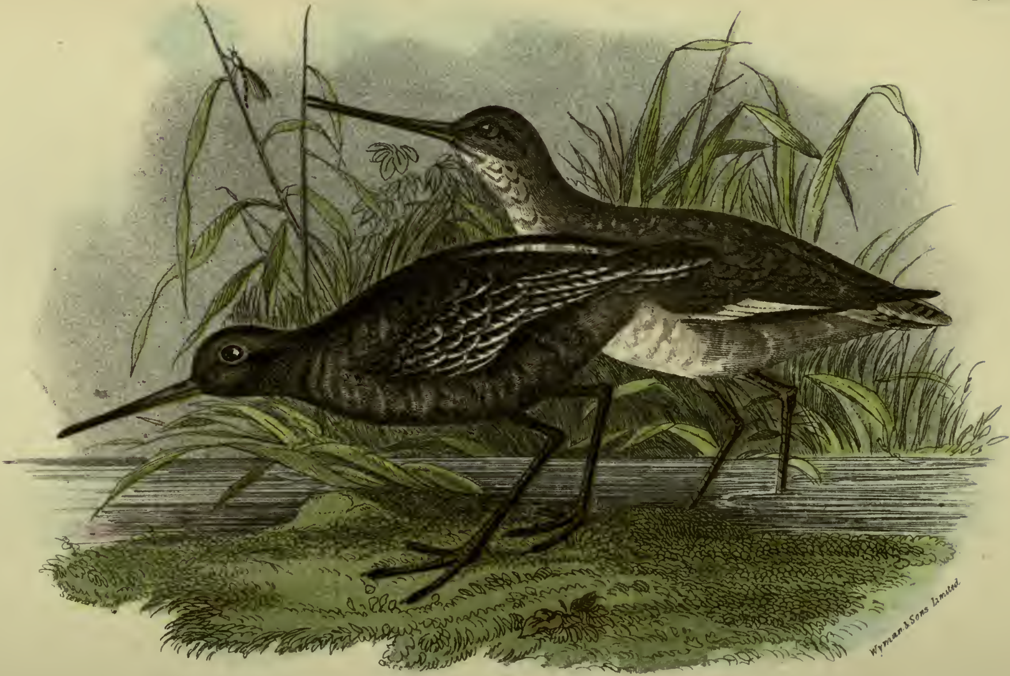
Range outside the British Islands.—The "Solitary Sandpiper" or "Wood-Tattler," as it is called by the American ornithologists, is generally distributed throughout North America during the nesting-season, breeding, in suitable localities, from Alaska to the Atlantic coast, ranging south, in winter, through Central America, the West Indies, to Brazil and Paraguay.

Habits.—The following is taken from Mr. D. G. Elliot's recent work on American Shore-birds;—"While loving solitude, it is not a morose or monkish species, shunning its kind, but is frequently met with in small companies of five or six individuals, on the banks of some quiet pool in a secluded grove, peacefully gleaning a meal from the yielding soil or surface of the placid water. As they move with a sedate walk about their chosen retreat, each bows gravely to the others, as though expressing a hope that his friend is enjoying most excellent health, or else apologising for intruding upon so charming a retreat and such select company. At times they run rapidly along the margin of the pond, often with wings raised high above the back, occasionally rising in the air to pursue some flying insect, which is caught with much skill and agility. The actions are light, quick at times, and graceful, and the bird flies rapidly, its neat plumage showing to great advantage when the wings are outspread, as it skims swiftly over the surface of the water, across open glades, or amid the trunks and branches of the trees. In addition to such places as the one described, the Solitary Sandpiper frequents tidal creeks, and rivulets away from the sea, and, occasionally, salt marshes; but I have never seen it on the beach, although I believe it does visit the borders of the ocean at rare intervals. It is often seen at high elevations in damp meadows or margins of springs and pools among the mountains, where its low soft whistling note sounds mournfully amid the stillness of the surrounding forest. When startled, as a rule they do not fly far, but settle soon again, and regard the cause of their temporary alarm with quiet, indifferent gaze. It feeds on insects, larvæ, worms, small crustaceans, &c., such as compose the daily bill of fare of the members of the Snipe family, and when it has satisfied its hunger, it will remain standing often up to its breast in the water, or drawn into a small compass on the shore. It frequently may be seen walking calmly in the water with slow measured steps, like the Heron does when looking for a good place to exercise his piscatory abilities."

Nest.—According to Mr. Elliot, only one authentic instance of the finding of the nest of this species is known, Mr. Richardson having discovered a nest, on the ground.

Eggs.—Those taken on the above occasion are described as pyriform in shape, light drab in colour, spotted with various shades of brown. They measured 1·37 by 0·95 inch, and resembled those of the Piping Sand-Plover (*Ægialitis meloda*).

PLATE XC.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SPOTTED REDSHANK.

THE TRUE TATTLERS. GENUS TOTANUS.

Totanus, Bechst. Orn. Taschenb. ii. p. 282 (1803).

Type, *T. calidris* (Linn.).

The representatives of this genus are distinguished from the foregoing by their shorter bill, which never exceeds the length of the tail, though the culmen is longer than the middle toe and claw. The bill is nearly straight, but with the tip slightly curved downwards, and the tarsus is longer than the middle toe and claw. The outer toe is joined to the middle one by a basal membrane, but the inner toe has only a slight web, and is cleft nearly to the base.

Five species of the genus *Totanus* are known, of which three are found in the Old World, viz., *T. fuscus*, *T. calidris*, and *T. otagnatilis*, while America has two species, *T. melanoleucus* and *T. flavipes*.

I. THE SPOTTED RED-SHANK. TOTANUS FUSCUS.

(*Plate XC.*)

Scolopax fusca, Linn. Syst. Nat. i. p. 243 (1766).

Totanus fuscus, Macgill. Brit. B. iv. p. 328 (1852); Dresser, B. Eur. viii. p. 165, pls. 568, 569 (1875); B. O. U. List Brit. B. p. 176 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 474 (1883); Seebohm, Hist. Brit. B. iii. p. 145, pl. 32, figs. 4–6 (1885); Saunders, Man. Brit. B. p. 603 (1889); Sharpe, Cat. B. Brit. Mus. xxiv. p. 409 (1896).

Adult Male in Breeding Plumage.—General colour above sooty-black, the head uniform; the hind-neck varied with white fringes and spots on the feathers, many of which are barred with brown; scapulars also blackish, with broader white spots and edges; wing-coverts blackish, edged with white, and notched with white on both webs; the greater coverts more distinctly barred and notched with white; bastard-wing, primary-coverts, and primaries bronzy-brown, the latter white on the inner web and freckled with brown; the secondaries barred with white and brown, the brown bars irregular in shape, and producing a mottled appearance; the innermost secondaries bronzy-brown, notched with white or brownish-white on both webs; the lower back pure white; rump and upper tail-coverts regularly and distinctly barred with black and dull white; tail-feathers also blackish, narrowly barred across with white, the bars somewhat interrupted on the outer feathers; sides of face, throat, and under surface of body sooty-black, with the remains of whitish margins, these being more distinct on the abdomen; the under tail-coverts distinctly barred with black and white; under wing-coverts and axillaries pure white, the edge of the wing and lower primary-coverts barred with black; bill very dark brown, the basal half of the lower mandible dusky-red; legs and toes orange-red; claws black; iris brown. Total length, 12 inches; culmen, 2·4; wing, 6·25; tail, 2·4; tarsus, 2·1.

Adult Female in Breeding Plumage.—Not to be distinguished from the male. Total length, 12 inches; culmen, 2·3; wing, 6·45; tail, 2·5; tarsus, 2·1.

Adult in Winter Plumage.—Entirely different from the summer plumage, but with red legs; upper surface grey, the lower back white; the rump and upper tail-coverts barred with black and white; wings bronzy-brown, all the coverts and secondaries edged or notched with white, the secondaries as plainly barred with black and white as in the breeding-plumage; the innermost secondaries bronzy-brown, with imperfect bars of black on the margins; head grey like the back, with a supra-loral mark of white; lores ashy; sides of face white, streaked with ashy-grey; under surface of body white, with streaks of dusky-grey on the fore-neck; sides of upper breast also ashy-grey; on the flanks and under tail-coverts a few incomplete dusky cross-bars.

Young Birds in First Plumage.—Similar to the winter plumage of the adults, but darker and more bronzy-brown, with white spots on the edges of the feathers, very distinct on the scapulars and wing-coverts; centre tail-feathers regularly barred with dusky; under surface of body broadly barred with dusky blackish on the breast, flanks, and under tail-coverts; the lower throat, fore-neck, and chest thickly mottled with dusky grey; the secondaries not so distinctly barred with white as in the adults, the white bars not being continuous across the feathers; bill olive, the base of the lower mandible orange; feet orange, claws olive; iris hazel.

Characters.—The Dusky Red-shank can always be recognised by its white lower back and rump. It is the largest of all the genus *Totanus*, with white lower back and rump, and it may be distinguished from the Common Red-shank by having the secondaries regularly barred with white and dusky-blackish, none of them being entirely white.

Range in Great Britain.—The present species is an occasional visitant on migration, seldom occurring on the western coasts at all, and is decidedly rare in Scotland and Ireland, where but few have been obtained. It is principally met with in the eastern and southern counties, and more often in autumn than in spring.

Range outside the British Islands.—The Spotted Red-shank nests in the high north, within the Arctic Circle, from Scandinavia to Eastern Siberia. It migrates south in the autumn, and winters in the Mediterranean countries, and apparently in other parts of Europe, as Mr. W. E. De Winton recently presented the Museum with four specimens killed near Harlingen in Holland, in December. It also visits, during the cold season, the Indian Peninsula, the Burmese Provinces, and China.

Habits.—I have only once seen the Spotted Red-shank alive, and the specimen which I shot on the 3rd of September at Pagham was a solitary bird which I mistook for an ordinary Red-shank at the time. I am, therefore, obliged once more to quote the observations of Seebohm and other writers. The above-named author writes:—"The Dusky Red-shank is not so much of a shore-bird as the Common Red-shank, and is rarely found upon the coast except at the two seasons of migration. It loves to haunt inland marshes and the vast swampy ground near large rivers, where the water lies in small pools. It is also partial to the low banks and dry parts of the beds of rivers. Its habits do not differ much from those of the other waders. It runs along the marshy shores, or wades into the shallow water, in search of food. It is rather shy, and when alarmed, it generally flies off for some considerable distance. Its flight is rapid, and, as is customary with so many wading birds, it sometimes skims along before it alights. During migration it keeps in small parties and flocks, which do not scatter much whilst feeding. It is said to be fond of wading, and, when it gets beyond its depth, to swim with ease, sitting gracefully on the water, and bowing its head, like a Phalarope, with every stroke of its feet. When wounded it has been known to dive for some distance."

Nest.—Our best information regarding the breeding of the Spotted Red-shank is derived from the researches of the late John Wolley, from whose account I make a short extract:—"This bird not unfrequently lays its eggs in a part of the forest which has formerly been burnt; and here is one of its most unexpected singularities—a marsh bird choosing the dryest possible situation, even hills of considerable height, and covered with forest timber. I have myself seen two nests so placed, and one of them at least was on ground which, from the charred wood lying about, had evidently been burnt at some former period. They were nearly at the top of long hills, many hundreds of yards from any marshy places, with good-sized fir-trees on all sides; but they were not in the thickest part of the forest, and the vegetation on the ground about was very scanty, diminutive heather and such-like plants growing thinly amongst short rein-deer lichen, slight depressions in the ground, placed near some little ancient logs, so nearly buried, however, as to afford no shelter; the bedding only a few dry leaves of the Scotch fir. The bird sits sometimes so close that one is tempted to try and reach it with the hand. Its white back is conspicuous as it crouches with its neck drawn in; it either gets up direct, or runs a short way before it rises, and then it flies round, with an occasional '*tjewty*,' or stands upon the top of a neighbouring tree, showing the full length of its slender legs, neck, and bill. But it is not until it has young that all its powers of eloquence are fully brought into play; it then comes far to meet any intruder, floating over him with a clear cry that echoes through the forest, or is heard over a great extent of marsh; or it stands very near one, bowing its head and opening its beak in the energy of its gesticulation."

Eggs.—Four in number, of a rich green ground-colour, when fresh, according to Wolley; or sometimes of a bright brown, with reddish-brown blotches and scribblings, which are congregated principally at the larger end, while in some they are almost equally distributed over the entire surface. Axis, 1·75–1·85; diam., 1·2–1·3.

II. THE COMMON RED-SHANK. TOTANUS CALIDRIS.

Scolopax calidris, Linn. Syst. Nat. i. p. 248 (1766).
Totanus calidris, Macgill. Brit. B. iv. p. 333 (1852); Dresser, B. Eur. viii. p. 157, pl. 568, fig. 1, pl. 569, fig. 2 (1875); B. O. U. List Brit. B. p. 176 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 469 (1883); Seebohm, Hist. Brit. B. iii. p. 140, pl. 32, figs. 1–3 (1885); Saunders, Man. Brit. B. p. 601 (1889); Lilford, Col. Fig. Brit. B. part xviii. (1891); Sharpe, Cat. B. Brit. Mus. xxiv. p. 414 (1896).

Adult Male in Summer Plumage.—General colour above brown, with more or less of a reddish hue, the feathers mottled with black centres, and notched or barred with black on the margins; scapulars brown, barred with black; lower back and rump pure white, with a few black spots on the latter; upper tail-coverts ashy-white, barred across with black; wing-coverts uniform, excepting the median and greater coverts, which are barred with lighter brown and notched with white at the ends; bastard-wing, primary-coverts, and primaries uniform blackish-brown; the inner primaries white towards the ends, freckled with brown; secondaries white, with blackish bases; the inner secondaries brown, notched with whity-brown, and more or less distinctly barred with black; centre tail-feathers brown, barred with darker brown, the remainder white, barred across with blackish; crown of head dark brown, the feathers edged with lighter brown; lores blackish; sides of face and ear-coverts white, streaked with blackish-brown; cheeks, throat, and under surface of body white, streaked with broad central markings of blackish-brown, most of the breast-feathers with more or less concealed bars of brown; abdomen white; sides of body and flanks with arrow-shaped bars and streaks of brown; under tail-coverts white, barred across with brown; under wing-coverts and axillaries pure white, with a few narrow brown bars near the edge of the wing; quills below dusky-brown, ashy on the inner web, many of the quills freckled or barred with brown; bill black, red near the base; feet bright orange-red; iris brown. Total length, 9·5 inches; culmen, 1·55; wing, 5·85; tail, 2·4; tarsus, 1·65.

Adult Female.—Similar to the male, but not quite so strongly mottled with black above, and somewhat less spotted below.

Total length, 10 inches; culmen, 1·5; wing, 6·2; tail, 2·45; tarsus, 1·65.

Adult in Winter Plumage.—Differs from the summer plumage in being more uniform both above and below. The upper surface is dark ashy-brown, the wing-coverts and inner secondaries are also uniform brown, excepting for a few whitish notches and bars at the end of the greater coverts and on some of the inner secondaries; otherwise the quills and tail-feathers are the same as in the summer plumage; throat and underparts white; the sides of the face and lower throat narrowly streaked with blackish; the fore-neck, chest, and sides of breast uniform ashy-brown; the sides of the body, flanks, and under tail-coverts white, with wavy bars of blackish-brown; the centre of the breast also mottled with a few spots and bars of brown; bill dark brown; feet yellow; iris dark brown.

Young after First Moult.—Similar to the winter plumage of the adults, but more spangled above, with reddish-brown edges to the feathers, and white or fulvous notches or bars on the wing-coverts and inner secondaries; under surface of body with triangular spots of brown on the fore-neck and breast, and the sides of the body irregularly barred with brown.

Nestling.—Reddish above, longitudinally streaked with black; the sides of the crown and sides of face buff, with a black line through the eye; down the centre of the crown rufous, with a median line of black; the nape and hind neck for the most part black; down the back a central line of black mesially mottled with buff, and on each side of the back a broad line of pale buff intersected by a line of black.

Characters.—The present species is easily told from the other Tattlers by its white rump and white inner secondaries. No other species of *Totanus* offers the above combinations of characters.

Range in Great Britain.—The Red-shank breeds in suitable places throughout the greater part of the United Kingdom, affecting the marshy country, especially on the Broads and near the coast rivers. It nests less commonly in Wales, and is rare on the outer Hebrides, but occurs nearly everywhere else, either as a nesting species or as an autumn visitor to the coasts and tideways. Mr. R. J. Ussher states that it is reported to breed in every county in Ireland, except Dublin, Carlow, and Waterford. On the callows of the Shannon, and in marshy districts, it often breeds numerously.

Range outside the British Islands.—This species breeds throughout the greater part of Europe and the Mediterranean, to the Færoes and Iceland, in Scandinavia up to 70° N. lat. and in Northern Russia near Archangel. It is also found nesting in Central Asia as far east as Mongolia, and north to about 55° N. lat. in Siberia. In winter the Red-shank visits Africa as far as the Cape, India, and the Burmese provinces, Japan, and China, and extends to the islands of the Indo-Malayan Archipelago.

Habits.—In autumn the Red-shanks are met with on most of our tidal harbours, either singly or in flocks, and they are generally seen frequenting the saltings or the green margins of the harbours left by the receding tide. Even at full tide they are fond of resting on the very edge of the saltings, standing motionless on one leg, and keeping a sharp look-out. Their clear and liquid note is not difficult to imitate by whistling, and small flocks may be decoyed within shooting range, especially when the tide has begun to ebb, and the green land becomes once more uncovered. The call-note is a syllable, *pi-ŭ*, generally uttered three times, *pi-ŭ*, *pŭ*, *pŭ*, in a minor key. During the breeding-season the love-note of the male is a lively flute-like whistle, and is often heard as he accompanies his mate in a short flight. The species may be said to nest in communities, as many pairs are found in close proximity on the marshy ground which they love to frequent. Like many other waders, the male often soars into the air with a trill, and he also indulges in many bowings and scrapings, opening and closing his wings, and spreading out his tail. Mr. Seebohm says that at this time of year the bird will often settle on a tree or a post.

Nest.—Generally well concealed in the centre of a hummock of long grass, the bents of which bend over and hide it. A few scraps of moss or bents are sometimes used as lining, but the nest is often nothing but a depression in the ground.

Eggs.—Four in number, pear-shaped, and rather large for the size of the bird. They are laid in April in the south, but later in the north of Europe, and Mr. Seebohm relates that he took fresh eggs in the north of Norway on the 22nd of June. The ground-colour varies from stone-colour to warm clay-brown or pale cinnamon; the overlying spots and blotches are of a blackish-brown generally, though sometimes reddish, and vary considerably in their distribution. Axis, 1·7–1·9; diam, 1·1–1·2.

III. THE MARSH GREEN-SHANK. TOTANUS STAGNATILIS.

Totanus stagnatilis, Bechst. Orn. Taschenb. ii. p. 292, cum tab. (1803); Sharpe, Cat. B. Brit. Mus. xxiv. p. 422 (1896).

Adult Male in Winter Plumage.—General colour above nearly uniform ashy-brown, some of the feathers slightly margined with white; scapulars like the back; lower back and rump pure white; upper tail-coverts white, mesially streaked and transversely barred with black; lesser wing-coverts darker brown than the back; median and greater coverts ashy-brown like the back, with narrow margins of paler brown; bastard-wing brown like the coverts; primary coverts and quills blackish, fringed with white at the end of the inner web; secondaries ashy-brown like the greater coverts, and fringed with white at the ends; the inner secondaries ashy-brown, irregularly spotted with black; centre tail-feathers ashy, irregularly barred with black, the remainder white, freckled on the outer web and barred on the inner one with blackish; crown of head ashy-brown like the back, mottled with blackish centres to the feathers; forehead and an indistinct eyebrow hoary-white; lores white; sides of face, ear-coverts, and cheeks white, spotted or streaked with ashy-brown; chin, throat, and under surface of body pure white, with a few dusky streaks and bars on the sides of the upper breast; under wing-coverts and axillaries pure white, the lower primary-coverts grey, edged with white; quills below ashy, with white fringes to the secondaries; bill black, olive-brown at base; feet yellowish-brown with an olive tinge; claws dark brown; iris brown. Total length, 9·5 inches; culmen, 1·6; wing, 5·2; tail, 2·1; tarsus, 2·1.

Adults in Summer Plumage.—Differ from the winter plumage in having black bars and centres to the feathers of the upper surface; on the throat and breast are some spots and streaks of black, as well as some arrow-head markings, these being less distinct on the flanks.

Characters.—The Marsh Tattler is distinguished from the Red-shanks by its smaller size, the wing scarcely exceeding five inches. The outer tail-feathers are white, freckled with brown on the outer web, but not barred as in the above-mentioned birds.

Range in Great Britain.—The Hon. Walter Rothschild informs me that he himself shot a specimen of a Marsh Sandpiper on the Tring Reservoirs in October, 1887. He identified it from Dresser's "Birds of Europe," and believes the identification to have been correct. As, however, the specimen was burnt in a fire, along with other valuable birds, he has been unable to submit it to me for examination.

Range outside the British Islands.—The Marsh Green-shank occurs throughout Southern Europe, across Central Asia to Eastern Siberia, and migrates in winter to South Africa, the Indian Peninsula, and the Moluccas as far as Australia.

IV. THE YELLOW-SHANK. TOTANUS FLAVIPES.

Scolopax flavipes, Gm. Syst. Nat. i. p. 659 (1788).
Totanus flavipes, B. O. U. List Brit. B. p. 176 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 480 (1883); Seebohm Hist. Brit. B. iii. p. 136, pl. 32, fig. 8 (1885); Saunders, Man. Brit. B. p. 599 (1889); Sharpe, Cat. B. Brit. Mus. xxiv. p. 431 (1896).

Adult in Winter Plumage.—General colour above uniform ashy-brown, with obsolete white fringes to the feathers; scapulars like the back; lower back and rump black, the feathers edged with white; upper tail-coverts white, the lateral ones with a few irregular bars of black; lesser wing coverts blackish, fringed with white; median and greater coverts brown, rather broadly edged with white, and sub-marginally barred with black in an interrupted manner; bastard-wing, primary-coverts, and quills blackish, the inner primaries and the secondaries browner, fringed with white; the long inner secondaries like the greater coverts, and sub-marginally spotted with black; tail-feathers white, barred with black, the bars more numerous and distinct on the outer webs, though closer together, and more broken on the inner webs, which are mostly white for the basal half; the centre feathers ashy towards the ends, with broad dusky bars;

crown of head uniform, like the back, or only slightly streaked with blackish; lores dusky-blackish, surmounted by a broad streak of white; eyelid white; sides of face and ear-coverts brown, streaked with white; cheeks, throat, and under surface of body white, the throat with hair-like blackish streaks; sides of neck, fore-neck, and chest ashy-brown, with whitish vermiculations, or whitish mottled with ashy-brown; breast and abdomen pure white, freckled with bars and vermiculations of ashy-brown on the sides of body and flanks; thighs and under tail-coverts white, the latter with a few bars of blackish; under wing-coverts white, barred with sub-marginal markings of blackish; axillaries white, with dusky bars, not very perfect, of brown; lower primary-coverts and quills below ashy, the former with whitish bars near the end. Total length, 9 inches; culmen, 1·45; wing, 6·7; tail, 2·3; tarsus, 2.

Adult Female.—Similar to the male. Total length, 9·5 inches; culmen, 1·6; wing, 6·5; tail, 2·2; tarsus, 2·25.

Adult Male in Breeding Plumage.—Differs from the winter plumage in being mottled with black, the centres to the feathers being black; median and greater wing-coverts being more or less conspicuously barred and notched with black; centre tail-feathers ashy-brown, barred with black, the lateral ones white with less complete blackish bars; head black, streaked with white; under surface of body white, with blackish streaks on the sides of the face, throat, and breast, the latter broader and more arrow-shaped; the sides of the breast distinctly barred with black; axillaries with only a few blackish bars; bill black; feet bright yellow; iris dark brown. Total length, 9 inches; culmen, 1·4; wing, 6·4; tail, 2·45; tarsus, 1·9.

Young after First Moult.—Much more mottled than the winter plumage of the adult, which it otherwise resembles; all the feathers having spots or notches of brownish-white on the margins; the throat and chest minutely streaked with ashy-brown, and the sides of the breast mottled with larger spots of ashy-brown; axillaries almost entirely white, with scarcely any evidences of dusky bars.

Characters.—The Yellow-shank is distinguished from both of the Red-shanks by having the lower back and rump dusky-brown instead of white, and by the upper tail-coverts being white, with the longer ones banded. Its yellow legs are also a specific character.

Range in Great Britain.—Only two specimens are recorded as having been met with in this country: one in Nottinghamshire some years ago, and another in Cornwall, in September, 1871.

Range outside the British Islands.—The present species breeds in Arctic America, from Hudson's Bay to Alaska, and south to Lake Superior, and probably to the vicinity of Chicago. In winter it migrates to Central and Southern America as far as Patagonia and Chili.

Habits.—Mr. D. G. Elliot writes:—"This Snipe is very sociable, goes in flocks of considerable size, and is always calling for others to come and join it. It is easily decoyed, more so than *T. melanoleucus*, and as it approaches the lures, it lowers its long legs and hovers over them. On the sea-coast, like all the waders, it is apt to have a sedgy flavour, but this is not apparent in the birds obtained in the interior away from salt-water."

Nest.—"A depression in the ground, placed amid the grass near water, lined with twigs and leaves."

Eggs.—"Four in number, of a light drab-colour or brown, blotched with chocolate or rufous, sometimes with a much paler tint, pyriform in shape. Axis, 1·5–1·75 inch; diam. 1·25" (Elliot).

THE SNIPE-TATTLERS. GENUS MACRORHAMPHUS.

Macrorhamphus, Leach, Syst. Cat. Mamm. and Birds Brit. Mus. p. 31 (1816).

Type, *M. griseus* (Gm.).

This genus has generally been considered to be closely related to the true Snipes, but I think that its most natural place will be found to be near the Godwits. Like these birds, it has a very long bill, with the culmen exceeding the tail in length. In appearance the bill is Snipe-like, and is slightly widened at the end of both mandibles, which are pitted. The female has a longer bill than the male.

Two species of *Macrorhamphus* are recognised, one being North American and the other inhabiting Eastern Siberia. It is the former which has visited Great Britain on several occasions.

I. THE RED-BREASTED SNIPE-TATTLER. MACRORHAMPHUS GRISEUS.

Scolopax grisea, Gm. Syst. Nat. i. p. 658 (1788).
Macrorhamphus griseus, Macgill. Brit. B. iv. p. 275 (1852); Dresser, B. Eur. viii. p. 187, pl. 571 (1878); B. O. U. List Brit. B. p. 177 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 357 (1883); id. Man. Brit. B. p. 561 (1889); Sharpe, Cat. B. Brit. Mus. xxiv. p. 394 (1896).
Ereunetes griseus, Seebohm, Hist. Brit. B. iii. p. 168 (1885).

Adult Male in Breeding Plumage.—General colour above very dark, the feathers being black, with pale cinnamon or buffy-white spots on either web of the feathers, the scapulars barred with rufous or buffy-white like the long innermost secondaries; wing-coverts like the back, with white tips to the greater series, the coverts uniform brown where the rufous spotting of the summer plumage has not commenced; bastard-wing, primary-coverts, and quills blackish, the latter with brown shafts, except the first one, which has a white shaft; the inner primary-coverts and inner primaries tipped with white, the latter with a whity-brown longitudinal streak along the terminal region of the shaft; the secondaries margined with white externally and round the tip, with a white shaft-streak also; the innermost secondaries like the back; lower back and rump white, the latter with black spots or horseshoe-shaped bars; the upper tail-coverts and centre tail-feathers white, washed with rufous, and barred across with dusky black, the former with a sub-terminal black spot as well; remainder of the tail-feathers blackish-brown, barred with white, these bars narrower than the dusky ones and somewhat irregular in shape; crown of head nearly uniform blackish, except for a few spots of pale cinnamon, the hinder-neck streaked with the latter colour and dusky blackish; a broad eyebrow of sandy-buff; sides of the face of the same colour, with tiny streaks of dusky-brown; lores dusky-brown; cheeks and under surface of body light cinnamon-rufous, with a few dots of dusky black, mostly on the sides of the upper breast, the sides of the body with dusky-blackish bars; under tail-coverts again spotted; axillaries white, barred with blackish; under wing-coverts also white, barred with horse-shoe markings of blackish; bill dark olive; feet light yellowish-olive; iris reddish-hazel. Total length, 10 inches; culmen, 2·2; wing, 5·5; tail, 2·0; tarsus, 1·3.

Adult Female.—Similar to the male in colour, but apparently with a longer bill. Total length, 11 inches; culmen, 2·9; wing, 5·65; tail, 1·9; tarsus, 1·15.

Adult Male in Winter Plumage.—Uniform ashy-grey above, with a few blackish shaft-lines on the feathers of the mantle; wing-coverts darker brown than the back, and fringed with white; quills as in the summer plumage; centre of the back white; the lower back, rump, and upper tail coverts white, barred with black, the bars not always transverse, but sometimes horse-shoe-shaped; tail barred with black and white, the bars complete on the centre tail-feathers, but somewhat broken up and irregular on the other ones; crown of head and hind-neck uniform ashy-brown; lores and sides of face dull ashy, with a tolerably broad streak of white above the lores, minutely streaked with dusky; the sides of the face also with dusky streaks; throat, chest, and sides of the body white, with dusky streaks on the former and small bars on the latter, the lower throat and fore-neck shaded with ashy; lower breast and abdomen pure white, unspotted; under tail-coverts white with distinct black spots; under wing-coverts and axillaries white, with black spots on the former, the greater series with bars of an irregular form, the cross-markings on the axillaries broken up into spots and irregularly shaped bars, some of which are sub-marginal.

Young Birds.—Are like the winter plumage of the adults, but are very much darker ashy-brown; the feathers of the back black, edged with rufous, before which is a mark of black; the grey on the throat is altogether darker, and is washed with rufous, and there is a distinct wash of rufous all over the breast and on the under tail-coverts; the bars on the axillaries are distinct, but are fewer in number than in the adult.

Range in Great Britain.—Some sixteen occurrences of this species have been recorded, and others, less genuine, have been noted. It is evident that stray individuals visit us occasionally in the autumn, and naturally most of them have been captured on our western coasts, though examples have been obtained in Norfolk, Lincolnshire, and Middlesex. In 1889 Mr. Howard Saunders knew of no specimens from Ireland, but the occurrence of the species in that country was recorded in 1894 by Mr. Barrett-Hamilton, two examples having been procured in Queen's co. and Tipperary respectively in November, 1893. The latter were supposed to belong to the western race, *M. scolopaceus*. I may remark that I have been unable to recognise the distinctions between *M. griseus* and *M. scolopaceus*, for it seems to me that long-billed and short-billed examples of the Red-breasted Snipe-Tattler occur, just as they do with the Dunlins and other waders, and that specific differences founded on these characters cannot be defined.

Range outside the British Islands.—The present species inhabits Arctic America, and breeds there, both long and short-billed forms being found in the north, and occurring together in their winter-homes in Texas and elsewhere in Central and South America.

Habits.—Mr. Elliot describes this species as a tame and unsuspicious bird, and one which is easily allured to its fate by means of decoy birds and an imitation of its note. Mr. E. W. Nelson writes:—"They are very demonstrative birds in their love-making, and in the last of May and first of June their loud cries are heard everywhere about their haunts, especially in morning and evening. Two or three males start in pursuit of a female, and away they go twisting and turning, here and there, over marsh and stream, with marvellous swiftness and dexterity. At short intervals a male checks his flight for a moment to utter a strident *péet û wéet ; wée-tōō, wée-tōō ;* then on he goes full tilt again. After they have mated, or when a solitary male pays his devotions, they rise fifteen or twenty yards from the ground, where, hovering upon quivering wings, the bird pours forth a lisping but energetic and frequently musical song, which can be very imperfectly expressed by the syllables *péet-peet ; pée-ter-wée-too ; wée-too ; pée-ter-wée-*

too ; pée-ter-wée-too ; wée-too ; wée-too. This is the complete song, but frequently only fragments are sung, as when the bird is in pursuit of the female."

Nest.—According to Mr. E. W. Nelson, "it is merely a shallow depression in the ground formed by the bird's body in the soft moss, and without a trace of lining."

Eggs.—Four in number. Of these Mr. Nelson gives the following description:—"The ground-colour varies from a greenish-clayey-olive to a light greyish or clay-colour. The spots are large, well-defined, and scattered sparsely, except about the tip of large end, where they are crowded. These spots are dark umber-brown, and present a striking contrast to the ground-colour." Axis, 1·8; diam., 1·2.

THE GODWITS. GENUS LIMOSA.

Limosa, Briss. Orn. v. p. 261 (1760).

Type, *L. lapponica* (L.).

The Godwits are distinguished from the Curlews by their straight bill. This is very long, and exceeds the tail in length; it is also slightly upturned, and is longer in the female than in the male.

Five species of Godwits are recognised, of which two are British, though neither of them breed within our limits. The Bar-tailed Godwit (*L. lapponica*) has an eastern representative, *L. novæ zealandiæ*, and *L. limosa* is also an Old World species, while two, *L. hudsonica* and *L. fedoa*, are American. These birds breed in the high north, but migrate so far south in winter that the range of the genus may be said to be almost cosmopolitan.

I. THE BAR-TAILED GODWIT. LIMOSA LAPPONICA.

Scolopax lapponica, Linn. Syst. Nat. i. p. 246 (1766).
Limosa rufa, Briss.; Macgill. Brit. B. iv. p. 260 (1852).
Limosa lapponica, Dresser, B. Eur. viii. p. 203, pl. 573, fig. 1 pl. 574, fig. 2 (1872); B. O. U. List Brit. B. p. 177 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 494 (1883); id. Man. Brit. B. p. 607 (1889); Lilford, Col. Fig. Brit. B. part xxii. (1892); Sharpe, Cat. B. Brit. Mus. xxiv. p. 373 (1896).

Totanus rufus, Briss.; Seebohm, Hist. Brit. B. iii. p. 156 (1885).

Adult Male in Breeding Plumage.—General colour above blackish, mottled with chestnut-red, with which each feather is notched or margined; wing-coverts dark brown, with white edgings to the feathers, a little broader on the inner webs of the greater series, many of the coverts tinged with chestnut, especially on the inner greater coverts; bastard-wing, primary-coverts, and quills blackish, the primaries lighter brown on the inner web, freckled towards its base, which is whitish, the first primary with a white shaft, the rest with brown shafts; secondaries brown, edged with white, and with a longitudinal sub-terminal mark of white along the inner web; the innermost secondaries like the back, blackish notched with rufous; lower back and rump white, mottled with spear-shaped spots of black; the upper tail-coverts barred with black and white or chestnut and black; tail-feathers brown or greyish-brown, tipped with white and barred across with white, the white bars sometimes tinged with chestnut; crown of head chestnut, streaked with blackish-brown centres to the feathers, narrower on the hind-neck; a broad chestnut eyebrow; lores and sides of face chestnut, with numerous blackish spots on the former; under the eye a whitish spot; entire under surface of body chestnut, with blackish streaks on the sides of the upper breast; under wing-coverts and axillaries white, with indistinct spots on the former, and bars on the latter of dusky brown; quills dusky below, with more or less white on the inner webs; bill flesh-colour, dusky on its terminal half; feet greyish-blue, toes darker, claws black; iris brown. Total length, 18·5 inches, culmen, 2·65; wing, 7·9; tail, 2·8; tarsus, 1·8.

Adult Female.—Similar to the male, but with a longer bill, and apparently never becoming so entirely chestnut below or on the sides of the face and neck. Total length, 16 inches; wing, 8·25.

Adult in Winter Plumage.—Ashy-brown above with longitudinal black centres to the feathers, and evident ashy-white margins, the wing-coverts like the back, and the white edges very strongly marked; wings and tail as in the breeding plumage, but the bars lighter brown and not so black, and those on the outer tail-feathers considerably broken up; lower back, rump, and upper tail-coverts pure white with a few arrow-head-shaped markings and bars, more distinct on the upper tail-coverts; head and neck light ashy-brown, streaked with lines of darker brown, the sides of the face speckled with light-brown; under surface of body pure white, with a few streaks of brown on the lower throat, sides of breast, and sides of body, where the streaks take the form of arrow-head-shaped markings; on the chest a few obsolete dusky cross-bars; axillaries and under-wing coverts white, the former with twin spots of blackish-brown; the centre tail-feathers ashy-brown with a few remains of darker brown mottlings, the rest of the feathers notched and barred with white on the inner webs, and usually uniform on the outer webs.

Young Birds.—Resemble the adults in winter plumage, but are much more fulvescent, and especially of an ashy-fulvous shade over the lower throat and chest, and more decidedly fulvous on the sides of the body. The whole of the upper surface is mottled with rufous-buff in the shape of tawny notches to most of the feathers, and the whole of the tail is regularly barred across with dusky-brown and buffy-whitish, the bands being about seven in number.

Range in Great Britain.—Although the present species does not breed in Great Britain, it passes on migration in considerable numbers, especially in autumn. It is, however, somewhat local in its distribution, for while this Godwit is found in winter sparingly in the eastern and southern counties of England, Mr. Abel Chapman has observed it in thousands on the coast of Northumberland, even in very severe weather. On the return migration in spring it is often seen in the south-eastern counties of England, and as far north as Norfolk; but it becomes rarer in Scotland, on the west coast of which country it is very local, though it is tolerably plentiful in Ireland during autumn and winter, receiving an accession of numbers in the spring, particularly on the west coast. (Cf. Saunders, "Manual," p. 607.)

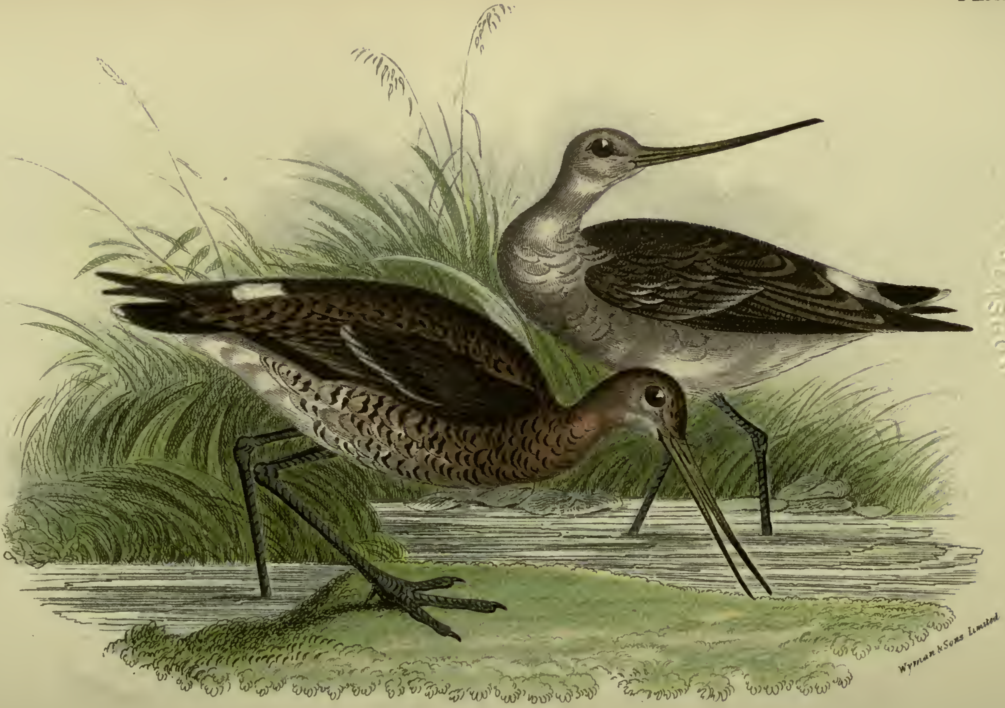
Range outside the British Islands.—The Bar-tailed Godwit breeds as far west as Finland and Lapland, and occurs as far east as the Yenesei Valley. In winter it migrates to the

Mediterranean and extends to Senegambia in West Africa, and to the Somali coast in East Africa, its eastern winter range being apparently Sind. In Eastern Siberia, east of the Taimyr Peninsula, its place is taken by an allied species, *L. novæ zealandiæ*, which passes in winter, by way of China and Japan, as far south as Australia and New Zealand.

Habits.—The present species is by no means rare on the mud-flats and tidal harbours on our coasts in autumn, and I have found it either singly or in small flocks. At this time of year the specimens obtained are nearly all young birds, and they may be decoyed down from an immense height in the air by imitating their note. I have sometimes whistled a little band till they settled on the mud within twenty paces of me, and they seemed so hungry as to disregard my presence entirely, and begin at once to feed voraciously, digging their bills down into the mud up to the hilt. I have never observed Godwits scooping with their bills in the sand or mud, or working their bills from side to side like an Avocet, as described by Seebohm, though I agree with the last-named writer that in its ways the Godwit is very like a Green-shank, or, for that matter, any other member of the genus *Totanus*.

In the spring the Godwits frequent the tidal harbours and mud-flats, feeding out on the latter at low-tide, and wing their way to the neighbouring fields when the tide begins to flow and cover their feeding-grounds. They are then very wary, and fly to and fro at a considerable height, nor will any amount of whistling induce them to settle within shooting distance. The red-plumaged birds which I have obtained for the British Museum were shot by me in May after a great deal of trouble, and I only obtained them by watching their line of flight to the pasture-lands, and waiting patiently till they flew over. Even in the spring-time they were in companies, and quite a goodly number of birds in their full nesting plumage could be seen with a glass, sitting out on the fields and engaged in dozing on one leg or preening their feathers. In autumn the young birds which arrive on our coasts are exceedingly unsuspicious, and they migrate right across country, for I have heard their call-notes high in the air, when standing on Primrose Hill in North London on a September night; and I have also heard them pass quite low down over Bournemouth in the night.

BAILLIE'S INSTITUTION GLASGOW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BLACK-TAILED GODWIT.

Their food is of the usual kind devoured by wading birds. According to Mr. Wolley, the species breeds in marshes chiefly in the neighbourhood of mountains, and the nest is very difficult to find.

Nest.—Like that of the next species.

Eggs.—Four in number, of an olive or olive-brown colour, somewhat sparsely-marked with light brown and underlying purplish-grey spots in about equal intensity. In some examples the spots are of a richer brown, and congregate somewhat towards the larger end of the egg. The form varies from a stout to an elongated pear-shape. Axis, 2·05–2·35 inches; diam., 1·45–1·55.

II. THE BLACK TAILED GODWIT. LIMOSA LIMOSA.

Scolopax limosa, Linn. Syst. Nat. i. p. 246 (1766).
Limosa ægocephala (Linn.), Macgill. Brit. B. iv. p. 269 (1852); Dresser, B. Eur. viii. p. 211, pl. 574 (1872); B. O. U. List Brit. B. p. 178 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 488 (1883); Lilford, Col. Fig. Brit. B. part xxvii. (1893).
Totanus melanurus, Seebohm, Hist. Brit. B. iii. p. 162 (1885).
Limosa belgica (Gm.), Saunders, Man. Brit. B. p. 609 (1889).
Limosa limosa, Sharpe, Cat. B. Brit. Mus. xxiv. p. 381 (1896).

(*Plate XCI.*)

Adult Male in Winter Plumage.—General colour above ashy-brown, with slightly paler edges to the feathers; lower back and rump blackish-brown; upper tail-coverts white, the long ones tipped with black; lesser wing-coverts darker brown than the back; median coverts dusky-brown, lighter brown externally, and fringed with white; greater coverts broadly tipped with white, forming a wing-band; bastard-wing blackish; primary-coverts also blackish, the inner ones broadly tipped with white; primaries blackish, with white shafts, the greater part of the inner webs white, and then sub-terminally brown, the white extending to the base of the outer web on all but the first primary, and increasing in extent on the inner primaries and secondaries, the latter being white, with a broad blackish tip, which gradually diminishes in size on the inner secondaries; the innermost secondaries brown like the back; *tail white at* *the base, with a broad black terminal band*, gradually decreasing in size towards the outer feathers, which are edged with white at the tip, the centre feathers brownish at the tip; head ashy-brown, the forehead more hoary; an indistinct whitish eyebrow extending from the base of the nostril to behind the eye; lores dusky-grey; below the eye a whitish spot; sides of face, sides of neck, throat, and chest light ashy-brown, a little darker on the sides of the body; fore-part of cheeks and upper throat white, as well as the whole of the centre of the breast, abdomen, under tail-coverts, under wing-coverts, and axillaries; the edge of the wing mottled with dark brown bases to the feathers; quill-lining white; bill pale fleshy, blackish-brown at the tip; feet olivaceous-green, toes blackish-brown; iris brown. Total length, 16·5 inches; culmen, 4·4; wing, 8·8; tail, 3; tarsus, 3·2.

Adult Female in Winter Plumage.—Similar to the male in colour, but rather larger; bill livid pink, blackish-horny at the tip; feet blackish-plumbeous, toes brownish; iris brown. Total length, 17·5 inches; culmen, 5; wing, 8·5; tail, 3; tarsus, 3·35.

Adult Male in Summer Plumage.—Differs in having the back more or less mottled with rufous and black, the crown of the head rufous, with short broad streaks of black, the sides of the face and entire neck all round rufous, the fore-neck and breast overshaded with rufous, and barred with dusky-blackish, these bars also developed on the abdomen and on the sides of the body.

Adult Female in Summer Plumage.—Similar to the male, but with less rufous, and distinguished by the larger size.

Young.—Distinguished from the adults by being darker brown above, with broad sandy-rufous edges to the feathers of the upper surface, the innermost secondaries banded with blackish-brown and sandy-rufous; the head rufous, streaked with dark brown, but indistinctly; sides of face buffy-white, with very fine streaks of brown; throat white; lower throat, sides of neck, and chest reddish-buff, slightly mottled with dusky bases to the feathers of the side of the breast; remainder of under surface white, suffused with rufescent buff, and shaded with ashy-brown on the sides of the body.

Range in Great Britain.—The Black-tailed Godwit is now only a migrant to Great Britain, occurring more or less locally on all our coasts, and appearing principally in our eastern and southern counties. It still breeds in Holland, and used to do so in England less than fifty years ago. The fens of Lincolnshire and the Isle of Ely were its habitat, and one of the last recorded nests was taken in Norfolk in 1847.

Range outside the British Islands.—From Belgium and Holland to Northern Germany, Poland, and Silesia, the present species nests, as well as in Scandinavia up to 65° N. lat. It also breeds in the Færoes, and in the south-east of Iceland. It ranges to Western Siberia as far as the valley of the Ob, and migrates south in winter to North-western India. At the same time of year it visits the Mediterranean, and also North-eastern Africa.

Habits.—The traveller by the train from Rotterdam to Amsterdam in May may often see Black-tailed Godwits standing in pairs by the muddy dykes, taking no notice of the rushing locomotive, and placidly standing on one leg by the side of the water, or dozing, with the bill tucked under the shoulder-feathers. Like that of the Bar-tailed Godwit, its nest is very difficult to find, as related by Seebohm in his "History of British Birds," where he tells of the toils of searching for the nests in the marshes of Jutland. Mr. A. C. Chapman has given a vivid account of the finding of the nests of the Black-tailed Godwit in West Jutland by his brother, Mr. Abel Chapman, and himself. He writes:—"The marshes, as distinct from the islets and salt-grass promontories, are areas of squashy moss, grass, rush, and bog-plants, difficult, if not dangerous, to explore; but in most cases there are creeks of water which intersect these marshes in various directions, and enable a flat-bottomed boat to be pushed about, so as to give access to their interiors. Then it becomes necessary, in the search for eggs, to traverse on foot their squashy surfaces, where, at every step, the ground quakes for yards around in a most unpleasant fashion, and the water oozes out of the moss well over one's boot-tops. Such are the places most loved by the Black-tailed Godwit, and, on approaching, the wailing cry will soon be followed by the note of a bird high in air. That bird has left its nest perhaps a thousand yards ahead, nor will it usually return thereto until it has made itself pretty confident that the danger has disappeared. To find the nest, therefore, is no easy matter. Indeed, after considerable experience, I may say that few birds are so cautious at their nests as Godwits, and even after the nest has, after long search, been luckily discovered, still the old birds never come within range of ordinary gun-shot. The general cry of these waders, when not distressed, may be syllabled as '*tŭ-eĕ-tōōō*,' often repeated; but they have a variety of cries, their distress-call being a clamorous wail, not unlike that of a Common Buzzard, though, of course, not so loud." In food and general habits the present species resembles the Bar-tailed Godwit.

Nest.—Those found by Mr. Chapman were mere depressions in the moss, without any special lining material. "The date of laying," he writes, "seems to vary considerably, for on May 10th we found our first nest, containing four very hard-set eggs, which must have been laid about the last week in April. Then, on May 13th we not only found a nest containing four fresh eggs, but we were also fortunate enough to discover a brood of young ones, perhaps two days old. It should be mentioned, in explanation, that we had thrice tried to find this last nest; but the bird always rose from a different part of the marsh, which led us to believe that she must have young, and it was while making, after a long watch, a final effort to find the eggs, that we accidentally stumbled on the young birds in the long grass. On one occasion, after we had been lying for some time pretty well concealed, we noticed, through the binoculars, a Godwit walking and running towards us, until it eventually disappeared quite suddenly. We thought that it might have sat down on the nest, so we marked the place carefully, and then stood up; the bird instantly rose about 150 yards from us, and on walking straight to the spot, we were delighted to find the nest with four olive-green eggs. In another instance we observed two birds playing together in the air, over a certain part of the bog, in such a manner, that our suspicions were sufficiently aroused to cause us to cross the quaking surface, until we actually walked right on to the nest and its four eggs."

Eggs.—Four in number, very similar to those of *L. lapponica*,

PLATE XCII.

BAILLIE'S
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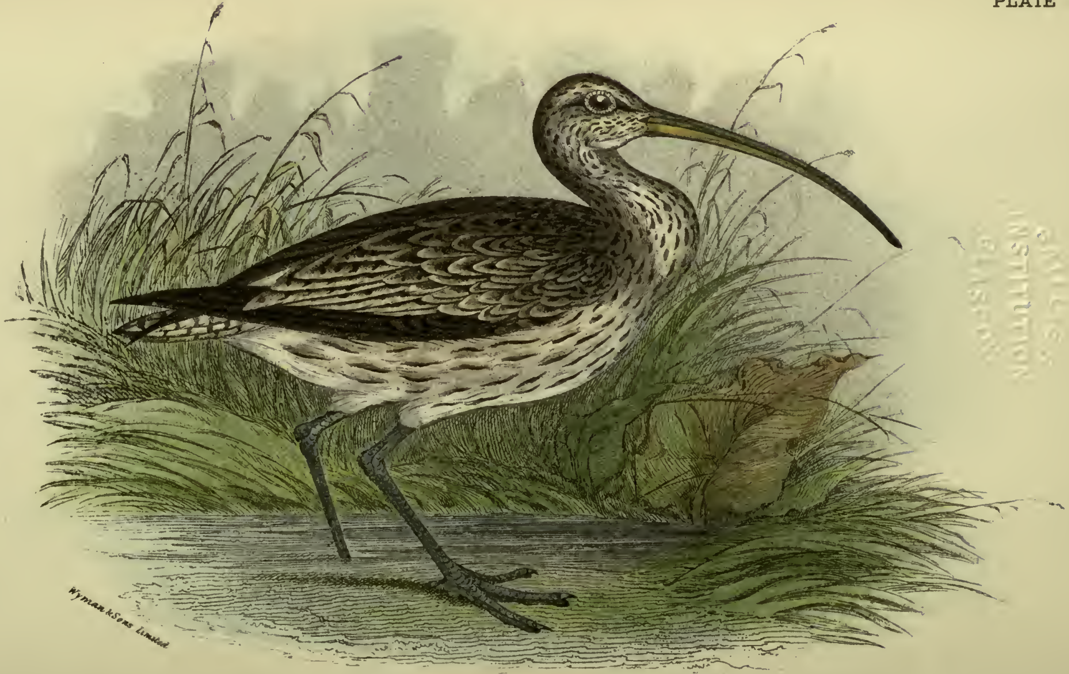
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COMMON CURLEW.

but sometimes darker olive-brown than the latter. Axis, 2·05–2·3 inches; diam., 1·45–1·55.

THE CURLEWS. GENUS NUMENIUS.

Numenius, Briss. Orn. v. p. 311 (1760).

Type, *N. arquatus* (Linn.).

Nine species of Curlews are admitted by ornithologists, of which four may be considered to be true Curlews, viz., *N. arcuatus*, *N. tenuirostris* of the Mediterranean region, *N. cyanopus* of Australia, and *N. longirostris* of North America. All of these have the head marked like the back, and do not show a pale median stripe along the crown like the other species of the genus, viz., the Whimbrels. Taking our common species of Whimbrel as the type of the second section, we find five species, all of which have the sides of the crown dark, with a broad pale band down the centre. The Whimbrels are:—our own species and its eastern race *N. variegatus*, *N. hudsonicus* and *N. borealis* of North America, and *N. tahitiensis* of the Pacific Islands. Thus it will be seen that the genus *Numenius* is well nigh cosmopolitan in its range.

I. THE COMMON CURLEW. NUMENIUS ARQUATUS.

Scolopax arquata, Linn. Syst. Nat. i. p. 242 (1766).
Numenius arquatus, Macgill. Brit. B. iv. p. 243 (1852); Dresser, B. Eur. viii. p. 243, pl. 578 (1873); B. O. U. List Brit. B. p. 179 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 499 (1883); Seebohm, Hist. Brit. B. iii. p. 94 (1885); Saunders, Man. Brit. B. p. 611 (1889); Lilford, Col. Fig. Brit. B. part xix. (1891); Sharpe, Cat. B. Brit. Mus. xxiv. p. 341 (1896).

(*Plate XCII.* [*ad.*], *Plate XCIII.*, *Fig.* 3 [*pull.*].)

Adult Male in Breeding Plumage.—General colour above brown, with longitudinal black centres to the feathers imparting a broadly striped appearance, the feathers of the upper surface being notched with ashy or rufous, giving to many of the scapulars a somewhat barred appearance; wing-coverts dark brown, edged with whity-brown, the median and greater series also chequered with the latter colour, imparting a somewhat barred appearance to this part of the wing; bastard-wing, primary-coverts, and primaries blackish, externally glossed with bottle-green, the primary-coverts slightly tipped with white, the shafts of the outer primaries white, those of the inner ones brown; the primaries notched or barred, on the inner web only, with sandy-buff or whitish, the inner primaries being thus marked on both webs, the secondaries distinctly barred with brown and white, both webs being deeply notched with ashy-whitish, the innermost secondaries ashy-brown with dusky-brown cross-bars, the centre of the feathers being also dusky-brown; lower back and rump pure white with black longitudinal spots or streaks, a little more distinct on the rump; the upper tail-coverts barred with black and white or with sagittate sub-terminal spots, the longer ones tinged with sandy-buff and the brown bars often not co-terminous; tail white or slightly tinged with sandy-buff, or shaded with ashy-brown, and crossed with nine or ten rather broad bars of blackish-brown; head dark brown, the feathers edged with sandy-buff, giving a streaked appearance; the neck more ashy, streaked with brown; over the eye a white streak, narrowly lined with black; sides of face and sides of neck, throat, and chest pale sandy-buff streaked with blackish-brown, more narrowly on the sides of the face; chin and upper throat white; breast, abdomen, sides of body, thighs, and under tail-coverts white, streaked with dark brown on the breast, and very narrowly on the abdomen and under tail-coverts; thighs unstreaked; sides of body with distinct bars or sagittate markings of dark brown; under wing-coverts and axillaries pure white, mottled with blackish centres to the feathers, the axillaries more or less regularly barred with blackish or with a sub-terminal heart-shaped spot; lower primary-coverts and quills below ashy-grey with white notches to the inner webs; bill fleshy-brown, shading into dark brown towards the tip; feet dusky; iris brown. Total length, 21 inches; culmen, 4·75; wing, 11; tail, 4·25; tarsus, 2·9.

The Curlew begins to put on its breeding plumage very early in the year, and I have examined a male bird procured in Ireland by Colonel Irby in January, which was so small and so heavily striped, when compared with others in the British Museum, that I was for a long time doubtful as to whether there was not a smaller race of Curlew to be distinguished. I am, however, now convinced that the specimen is nothing but a male, with the summer plumage unusually advanced.

Adult Female in Breeding Plumage.—Similar to the male, but larger, and with a longer bill. Total length, 24 inches; culmen, 6·1; wing, 12; tail, 5·7; tarsus, 3·2.

Adults in Winter Plumage.—Very similar to the breeding-plumage, but paler, and much less heavily striped, especially on the under surface of the body; the black spots and streaks on the rump scarcely apparent, and concealed by the white plumage; upper tail-coverts white, with very few brown cross-bars; tail white, barred with brown; feet pale leaden-grey, claws blackish; bill blackish-brown, flesh-colour at the base of the lower mandible.

Young.—Differs from the adult in being much more tawny, and, as Seebohm has pointed out, young birds may always be distinguished from old ones by the much lighter pattern of the notches and bars on the innermost secondaries, these markings being tawny-buff, and the black centres to the feathers being much broader. The nestling is figured below. (*Plate XCIII. Fig.* 3.)

Range in Great Britain.—The Curlew is a resident species in the British Islands, breeding throughout Scotland, the north of England, and also in Wales, as well as on the high moor-lands of Southern England, from Wiltshire and Hampshire to Cornwall. Mr. Ussher records it as breeding in nearly every county in Ireland, on the bogs and moors. In the autumn and winter numbers of immature Curlews frequent the coasts of Great Britain, and many of them do not breed, but remain throughout the whole summer, and examples have often been found inland when any sudden floods cause a wide expanse of water.

Range outside the British Islands.—Throughout Scandinavia the Curlew nests, as well as in Northern Europe, generally from Brittany to Northern Germany, Poland, and Russia, and as far east as Lake Baikal; for I am unable to find any specific difference between the so called *N. lineatus*, which occurs on the shores of the Indian Peninsula in winter. The absence of the black stripes on the lower back and rump is simply caused by the fact that the birds are killed in winter plumage before the black stripes, which are part of the summer dress, have begun to develop. In winter the Curlew also visits the countries of the Mediterranean, Africa, and Madagascar.

Habits.—The following excellent account of the Curlew has been given by the late Mr. Seebohm:—"In summer, when it has retired to the heaths and mountain-marshes, it rises, screaming in the air at the least alarm, arousing all its companions in the vicinity, so that soon the whole swamp or heath resounds with their wild impressive cries. The Curlew flies with great quickness, flapping its long wings with regular beats, or sometimes holding them motionless and expanded as it glides along for a few yards ere alighting. The wings are bent at a considerable angle, the neck outstretched, the bill slightly depressed, but the legs are extended straight, and show beyond the tail. As a rule the Curlew flies high; when flushed it soon mounts into the air, and at times performs various graceful evolutions above its marshy haunts. Upon the ground the Curlew walks about in a solemn Heron-like manner, only occasionally running, as if such a mode of progression were beneath its dignity. It often wades on the little pools on the marshes or sea-shore, and bathes frequently. It is very fond of basking in the sun on some exposed sand bank, where it can easily detect the approach of danger. It is very seldom that the actions of the Curlew on the ground can be watched in summer, when the bird is in its breeding haunts; it is so excessively wary that it generally takes wing long before it is observed, and it so much resembles the colour of its surroundings that it is almost invisible until it takes wing. Its feeding-grounds on the moors are in marshy spots, near the dark brown peaty pools, where rushes grow so thickly as to hide it from view, or by the side of the little trout-streams that dance and dash along over the heath. Here its actions and mode of progression are very similar to those on the shore; it probes the soil in search of food, and explores the surrounding herbage for a similar purpose. Every now and then it raises its long neck above the vegetation, looking warily around, as if scenting danger from afar, ready at the least alarm to fly hastily away to safer quarters. The distant alarm-note of another Curlew puts it on the alert, and generally it rises at once, with startling cries, warning in its turn all its kindred that may happen to be in hearing of its call. In the course of feeding, either on the upland marshes or on the shore, the bill is often thrust for a considerable distance into the ground; and this long bill, ill-adapted as it may seem for the purpose, can readily secure a passing insect, or pick one adroitly from the water or from a grass-stem.

" In summer the food of the Curlew is principally composed of worms, insects and their larvæ; and on the moors the birds vary their diet with the fruit of the whortle-berry and crow-berry. In winter its food is more varied, and consists of sand-worms, small crustaceans and shells, little crabs, &c. In the stomachs of birds shot at their winter quarters the shoots of grasses and fragments of leaves have been found. At the nest the Curlew has two perfectly distinct notes or whistles. The well-known *kerr-lee* is the call-note; and the other, which may be expressed as *wiw-i-wiw-i-wiw*, is as unquestionably the alarm-note. It is said that it has a third note, resembling *wha-up*, whence its trivial name of 'Whaup'; but that is a note with which I am entirely unacquainted."

Nest.—A slight depression in the ground or in a tuft of grass, lined with a few dead leaves or dead grass. Mr. Robert Read writes to me:—"The Curlew usually nests in wild open moorlands, but I have also found its eggs in a grass meadow. It is also fond of nesting on tree-less islands covered with grass and heather."

Eggs.—Four in number, somewhat large for the size of the bird. Mr. Read says:—"The eggs are usually of the well-known pyriform shape common to the *Limicolæ*, but sometimes one gets them quite round, and at others very much elongated, like those of the *Colymbidæ*. The colour varies from an olive stone-grey to a light olive-brown, or even greenish-olive. The markings are brown, nearly always prominent, sometimes distributed over the entire egg, and mixed with light grey underlying markings, while at other times the markings become confluent and form blotches, continuous round the larger end of the egg. More rarely the markings congregate at the smaller end. Axis, 2·65–2·9 inches; diam., 1·8–2·0.

II. THE WHIMBREL. NUMENIUS PHÆOPUS.

Scolopax phæopus, Linn. Syst. Nat. i. p. 243 (1766).
Numenius phæopus, Macgill. Brit. B. iv. p. 253 (1852); Dresser, B. Eur. viii. p. 227, pl. 576 (1873); B. O. U. List Brit. B. p. 179 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 507 (1883); Seebohm, Hist. B. iii. p. 100 (1885); Saunders, Man. Brit. B. p. 613 (1889); Sharpe, Cat. B. Brit. Mus. xxiv. p. 355 (1896).

Adult Male in Breeding Plumage.—General colour above nearly uniform dark brown, excepting for the broad ashy-brown markings on the feathers of the mantle and upper back; the wing-coverts like the back, but the margins paler and more whitish, the greater series with whitish notches on both webs; bastard-wing and primary-coverts dark brown, fringed with white at the ends; primaries blackish-brown, notched with white on the inner webs, which have a barred appearance along the edge of the latter, the inner primaries notched with white, also on the outer webs; secondaries brown, notched on the outer web and barred on the inner web with white, the innermost secondaries nearly uniform brown like the back; the shafts of the outer primary white, of the second whity-brown, and of the rest pale brown; lower back and rump white, slightly mottled with longitudinal spots of blackish-brown, more or less concealed on the back, but larger and more distinct on the rump; upper tail-coverts barred with brown and whitish, the brown bars somewhat irregular and not co-terminous; tail-feathers ashy-brown and tipped with white, and crossed by regular bars of dark brown, about nine in number; centre of crown whitish and streaked with brown, the remainder of the crown dark brown, forming two broad bands, and followed by a broad eyebrow of dull white, and narrowly streaked with small lines of blackish; lores and upper margin of ear-coverts dark brown; remainder of sides of face and neck all round pale brown, streaked with darker brown, the cheeks somewhat whiter; chin and upper throat white, with scarcely any brown spots; lower throat, breast, and sides of body pale rufescent-buff, thickly clouded with longitudinal streaks of dark brown on the throat and breast, and with bars of dark brown, of a more or less sagittate shape, on the sides of the body and flanks; abdomen and under tail-coverts white, the latter with streaks and bars of dark brown; under wing-coverts and axillaries white, with dusky-brown bars, very distinct on the latter; quills dusky-brown below, notched with white; bill black, the base of the under mandible pale brown; feet light greyish-blue, claws black; iris brown. Total length, 15 inches; culmen, 3·4; wing, 9·5; tail, 3·7; tarsus, 2·5.

Adult Female in Breeding Plumage.—Similar to the male in plumage, and scarcely differing in size. Total length, 15 inches; culmen, 3·3; wing, 9·8; tail, 3·9; tarsus, 2·25.

Adults in Winter Plumage.—Similar to the summer plumage, but with the lower back perfectly white, the black streaks being concealed; the under parts less distinctly streaked, and the flanks less distinctly barred than in the summer plumage.

Young Birds.—May always be distinguished by the more mottled appearance of the upper surface, most of the feathers being spotted on both webs with whitish or pale rufescent-buff; the lower back and rump are plentifully mottled with spots of dusky-brown, and the innermost secondaries very distinctly notched with rufescent-buff; the streaks on the throat and breast, and the bars on the flanks, almost as plentifully developed as in the adults; the bars on the axillaries are often very incomplete, and are, in rare instances, entirely absent.

Range in Great Britain.—The Whimbrel is chiefly known as a migrant, but it breeds sparingly in the Orkneys and Shetlands, as well as in North Ronay in the Outer Hebrides. A certain number remain during the winter, especially on the west coast of Ireland, but the species is for the most part migratory in Great Britain, coming north in April and May, and returning in August and September. The first heralds in autumn migration are the young birds returning south in July.

Range outside the British Islands.—From Iceland and the Færoes to Scandinavia and Northern Russia, as far as the Valley of the Petchora, the Whimbrel breeds above the limit of forest growth. The exact eastern limit of the breeding-range is at present unknown, as in Eastern Siberia the Whimbrel is replaced by an allied species, *N. variegatus*, which breeds in Eastern Siberia, and passes through Japan and China to the Malayan Archipelago and Australia in winter. The ranges of the two species coalesce in their winter quarters in Burma and the Malayan Peninsula, but, as already noticed, information as to the exact division of the summer ranges of the two species is still wanting. The Whimbrel wanders occasionally to Greenland, but is not known to breed there. In winter it goes south to the Mediterranean, and passes to South Africa. It is also found at that season on the shores of the Persian Gulf and many parts of the Indian Peninsula, occurring in the islands of the Bay of Bengal and on the shores of the Burmese Provinces and the Malayan Peninsula. In the last-named localities *N. variegatus*, coming from the east, inhabits the same winter quarters.

Habits.—The quivering note of the Whimbrel gains for it, on some of our southern coasts, the common name of "Titterel." In the autumn it is found in small flocks which are, as a rule, remarkably shy. They feed out on the mud-flats or on the margin of the sea at low water, and, as the tide begins to flow, they gradually retrace their steps towards the shore, until, when the tide has made good head-way, they rise and seek the inland pastures, after the manner of the Godwits in spring. Thus I found them somewhat difficult to obtain in autumn, as the birds flew high in the air, keeping up their "tittering" note, and carefully avoided the point of concealment which I selected. Occasionally a young bird will be found singly on the mud-flats and may be procured without difficulty, but I have known the wariness of the Whimbrel to be circumvented at night-time, for have I not often listened to the tale of my old shore-shooting companion, Alfred Grant of Sidlesham, of how he shot twenty one Whimbrel on the sand-spit of the "Dobbin" in the Pagham Harbour of yore. On one of my old collecting trips for the British Museum I also procured from the little embankment which he had erected for the shooting of the Whimbrel the largest number of shore-birds which it was my lot to procure in my life. He had noticed that at night time the Whimbrel instead of going outside the harbour on to the sand beyond, were wont to collect on the "Dobbin," but more especially on the sand-spit above mentioned. Having ascertained that this point of the "Dobbin" was their favourite resting-place at night-time, he double-shotted his great Birmingham gun, and tied a string to the trigger, the charge being too heavy to fire from the shoulder. He directed the point of the muzzle on to the end of the sand-spit and covered the single barrel of the gun with a huge heap of stones; then, in the dark, judging the time when the Whimbrel would congregate, he crossed a mile of mud-flats, forded the creek, and crept up towards the unsuspecting birds. By dint of crawling over the shingle of the "Dobbin" he gained possession of the string attached to the gun, listening for the "tittering" of the Whimbrel to announce their nightly assemblage. When the whistling notes of the birds had assured him that a goodly number were present, he discharged his gun. It did not burst, as he had fully expected, but, as a reward of his enterprise, he picked up twenty-one Whimbrel.

On the spring migration I have found the Whimbrel much more easy to procure. They are then generally met with singly, and I have obtained several birds in full breeding plumage on the saltings of Romney Hoy, where by a careful stalk they could be approached within distance. Although in many respects resembling the Curlew, there are many points of difference in the habits of the two birds, and I have never seen the Whimbrel distributed singly over the mud-flats as is often the case with the Curlew, nor is their call-note so often heard. Curlew likewise do not go in close flocks like the Whimbrel.

Nest.—Seebohm writes:—"The favourite breeding-grounds of the Whimbrel are the moors and heaths in close proximity to the sea. When the vicinity of their nest is intruded upon, the Whimbrels fly into the air and circle round and round. The nest is very slight, a little hollow amongst the heath, or under the shelter of a tuft of coarse grass, in a dry part of the swamp, and is lined with a few scraps of dry herbage."

Eggs.—Four in number, laid at the end of May, pyriform in shape, and resembling those of the Curlew, but smaller. Axis, 2·05–2·45 inches; diam., 1·6–1·75.

III. THE ESKIMO CURLEW. NUMENIUS BOREALIS.

Numenius borealis, Lath. Ind. Orn. ii. p. 712 (1790); Dresser, B. Eur. viii. p. 221, pl. 575 (1873); B. O. U. List Brit. B. p. 178 (1883); Saunders, ed. Yarrell's Brit. B. iii. p. 512 (1883); Seebohm, Hist. Brit. B. iii. p. 94 (1885); Saunders, Man. Brit. B. p. 615 (1889); Sharpe, Cat. B. Brit. Mus. xxiv. p. 368 (1896).

Adult Male in Breeding Plumage.—May easily be distinguished by its smaller size from the two preceding species. It has a longitudinal pale band down the crown like the Whimbrel, but from this bird it is easily recognised by its uniform primaries, which have no pale notches on the inner web, but sometimes show slight indications of frecklings along the inner margin; the lower back and rump dark like the upper back; the lower throat and chest streaked with blackish, the latter having numerous sagittate markings, very distinct on the flanks; the axillaries and under wing-coverts cinnamon-rufous, barred with dark brown; bill brownish-black, the lower mandible flesh-colour at the base; feet greyish-blue, claws black; iris dark brown. Total length, 13·5 inches; culmen, 2·5; wing, 8·6; tail, 3·2; tarsus, 1·8.

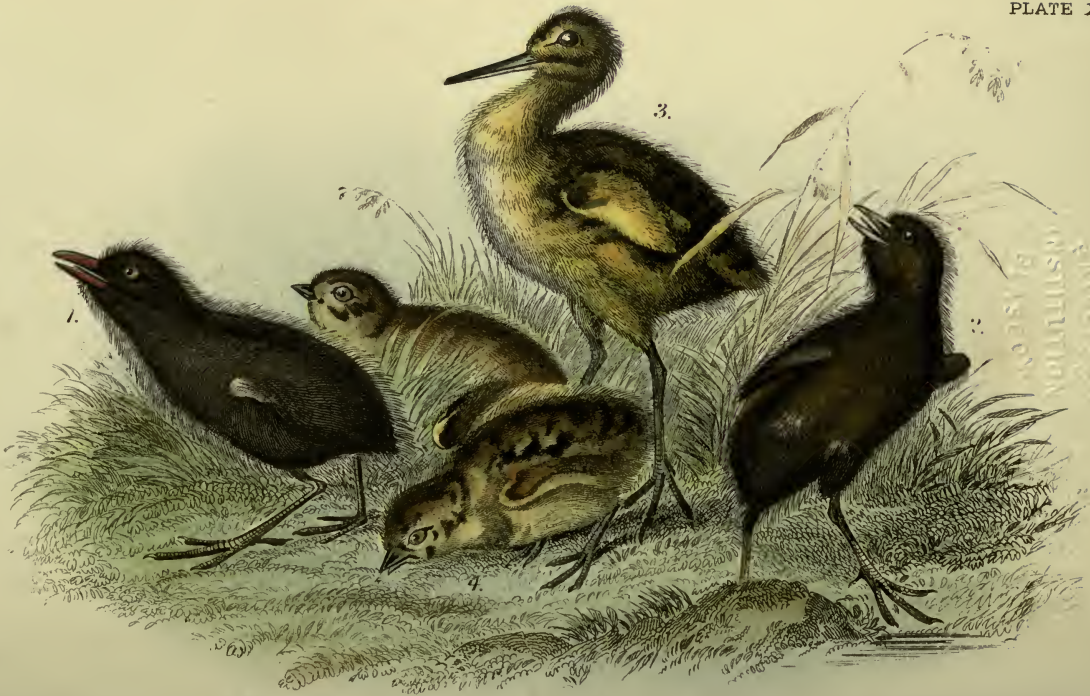
Adult Female in Breeding Plumage.—Similar to the male. Total length, 14 inches; wing, 8·7.

Young.—Recognised by the spotted character of the upper surface, which is uniform brown, with scattered spots and notches of rufous-buff on the plumage, especially on the innermost secondaries; the streaks plentiful on the throat and neck; the chest and breast with irregular and sagittate markings of dusky-brown, which are also very distinct on the sides of the body.

Range in Great Britain.—The Eskimo Curlew has occurred as an accidental visitor in all three kingdoms, and the record of British-killed examples amounts to some half-a-dozen individuals.

Range outside the British Islands.—The Eskimo Curlew nests in Arctic America and migrates south in winter through South America, even to Patagonia.

PLATE XCIII.



1. Moor-Hen. 2. Land Rail. 3. Curlew. 4. Partridge.

Mr. D. G. Elliot writes:—When feeding about in such large flocks, they keep up a constant low chattering noise, as if indulging in an uninterrupted flow of conversation. They frequent the open flats in the vicinity of the seashore, feed on insects, worms, &c., and are shy birds, and in the autumn become very fat, and their flesh is highly esteemed. It is known as Doe Bird, Futes, Small Curlew, &c. It flies with great rapidity, is easily alarmed and difficult to approach, unless when feeding quietly among other waders; but is more readily shot when flying to and from its feeding-grounds, when, if one stations himself on their route, as they generally pass at no great height, many can be secured. In Labrador this Curlew is seen in flocks of various sizes; sometimes several thousands of the birds are gathered together, and their flight is swiftly performed by regular beat of the wings, and they often execute many beautiful evolutions, frequently massing together in compact ranks. On alighting, the wings are raised over the back, as is the habit of many Snipes and Plovers, and then folded carefully and with deliberation into the accustomed place. The note is a soft, clear whistle, and the birds come readily to the gunner (if he can imitate their call cleverly), dropping the legs and curving the wings as they sail unsuspectingly to the decoys. They feed on grasshoppers, berries of various kinds, and small snails, which they detach from the rocks.

Mr. E. W. Nelson writes:—"Small flocks of this Curlew will follow a single Hudsonian Curlew all over the country in the same manner as smaller species of Snipe will follow one of a larger kind." He imagines that it is on account of the superior watchfulness of the larger bird, and that a greater degree of protection is thereby secured.

Nest.—Merely a depression in the ground, lined with a few decayed leaves and dried grass.

Eggs.—Four in number. The solitary specimen in the British Museum, is of a light olive-brown, with distinct grey underlying spots distributed over its surface, the overlying spots being brown, and chiefly congregated about the larger end, where some of them are confluent. Axis, 2·25 inches; diam, 1·55.

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